

Marine Corps Gazette

JUNE 1961

THIRTY CENTS



DEVELOPMENT OF
OUR BODY ARMOR

Marine Corps Gazette

JUNE 1955
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COVER



The English longbow and the clothyard shaft sounded the death knell of body armor at the battle of Crecy in 1346. The advent of gunpowder and changes in tactics completed the *coup de grace*, and armor lay forgotten as a decadent relic of the age of chivalry. Six centuries later, at the Naval Medical Field Research Laboratory, Camp Lejeune, a man stood up in a vest made of plastic plates and nylon fibers—his colleague fired a .45 at him. The vest and the pioneer withstood the test, and soon after Marines were wearing the new body armor in Korea. Read the dramatic story of the *Development of Our Body Armor* on page 10. The cover was painted by MSgt S. C. Fisher. Back cover—portents of the "new warfare." Marines from the 3d Marine Atomic Exercise Brigade are silhouetted against the Nevada sky during operation Desert Rock VI. Photo by MSgt W. E. Sutphin.

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"Not a man in sight..."

As I was driving along a country road with four other women as my guests a tire went flat. My heart sank with it, for my tire-changing experience was nil and the road was empty of aid. Pulling to the side, I hunted out the tools, remarking as I did so:

"Not a man in sight, of course. What we need is an angel from heaven!"

Imagine our astonishment when a cheery voice above our heads said, "I'll be down in a minute, lady." Unknowingly, I had stopped beside a telephone pole at the top of which sat our "angel"—a line repairman.

From the Reader's Digest feature, Life in These United States . . . "true stories showing appealing or humorous sidelights on the American scene."



A Friend in Need

We got a chuckle out of that little story and we hope you did too. Best thing about it is that it isn't an isolated case.

Many a time each day, telephone men and women go out of their way to help someone in trouble. Their friendly, neighborly spirit is one of the nice things about telephone service.

BELL TELEPHONE SYSTEM



message center

"Gruntles"

... Hurray for *Gruntled*. My experience in the detail branch at HQMC during the earlier phase of Korean mobilization impressed me with 2 facts above all others. They were: 1) the peacetime regular Marine Corps is primarily a base for rapid expansion in wartime and, 2) when this expansion comes, the success of the Corps depends largely upon the capability of the large mass of average officers to do an enthusiastic job with worthwhile results. Had the Marine Corps, in the intervening period of WWII and Korea, concentrated upon developing a few select individuals into the *creme de la creme* of the Corps (remembering that they who may be the cream in some person's eyes may be a number of things of opposite nature in the eyes of others), we would have found our elite individuals overwhelmed by the burden of carrying a rapidly expanding Corps in 1950. The job would then have fallen upon the shoulders of officers, who having been long convinced that they were not destined to succeed, would have performed their duties in second gear with obvious mediocre results. Let us keep the feeling alive amongst our officers that until the day they receive their last parade and review, the circumstances of ability and luck may enable them to be Commandant.

COL LOREN E. HAFNER
Quantico, Va.

... My God! I've been shot by a *Gruntled* gun. Mowed down in the prime of life (35 and already a LtCol) by the scatter shot of misunderstanding.

Before moving on to that Big Rifle Range in the Sky, may the dying man say his last words?

We few—we precious few, we band of brothers—we shall surely not descend into 2 antagonistic classes, the privileged and the underprivileged, simply by recognizing ability and promoting for it. Under any system it is logical to assume that ability begets promotion and that any man worth his salt does his best to demonstrate such ability. Is it to be understood from the *Gruntled* gun that we Marines must not be too tempted by hope of elevation? Is it to be presumed that the survival of the fittest is a circumstance to be delayed as long as possible in a Marine Corps selec-

tion system? If these questions are to be answered in the affirmative as they seem to have been in the April issue, would it not be better still to completely remove the carrot and let the old horse run for the sheer joy of his association with the other racers—with the understanding, of course, that no winning would be allowed. My personal belief is that the Marine Corps and ambition march together—whether we have 40-year-old generals or second lieutenants, the Corps will not be sundered by the terror called ambition. As for the unfortunate references to blitz promotions and the jokes there born—that is another equine and one that has been beaten to death—only to prove that young men are promotable and usually quite capable. I rather blitzed it myself and didn't receive too many raps—how about the *Gruntled* gun?



You of little faith, try that merit system with a little more feeling for the goal to be attained—the *best man in the right place at the right time.*

LT COL S. B. FOLSOM
Oslo, Norway

... *Recommended for Promotion When Due* certainly carries a logical argument and I can't help but agree with it in principle. However, I can't accept the proposal that maturity is not needed for high command or that it necessarily connotes age. Some people are mature at 18, others never. Let's not have a system that fosters that "brilliant young staff type" to the detriment of command.

Reduced to its simplest terms the article proposes that the attrition factor on selection be upped about 100 per cent. This may be one answer to increasing Service attractiveness and has considerable merit. The harder it is to get something, the more people want it. But here the problem of what to do with the pass-overs occurs, present legislation does not require immediate separation

from the Service. Also the problem of procuring suitable officers to feed in at the bottom would present itself and procurement is not too easy these days.

Maybe the prospect of a more rapid rise to the levers of power would supply sufficient incentive to induce more candidates to apply. At any rate, LtCol Folsom has presented a thought-provoking article which merits consideration. As an interim measure I would propose that an officer's position be re-adjusted on the lineal list each time he came up for selection, that would at least provide some additional incentive.

LT COL J. R. ANDERSON
Newport, R. I.

Armed Forces Day Blowouts

... Congrats on *Blow Up Your Audience* by 1stLt J. W. Kennon, April GAZETTE. The "Assault of a Fortified Position" demonstration is in my opinion, one of the outstanding public relations stimulus innovated—Marine Corps-wise.

Such a demonstration is particularly invaluable at isolated or independent commands where the general public is rarely exposed to military combat practices. Chances are, the average citizen has seen a parade or a drill. However, a realistic demonstration, such as the one described, leaves the taxpayer with the satisfaction he has received his money's worth through an impression displayed as only Marines can do it.

Several Inspector-Instructors throughout the 6th R&R District have with variation, utilized this demonstration with considerable success in spreading good will. This is true of other Marine units throughout the country.

The undersigned has experienced that success through a similar demonstration during the course of Armed Forces Day in 1954 to an audience of some 3,000 spectators. A bigger and better demonstration is planned this year.

During the interim, a series of similar demonstrations involving a fire team level and upwards, are being conducted with similar success, in the interests of recruitment, at local schools. The problem is flexible, depending on time available, size of school, terrain and other factors.

Some suggestions along these lines. Mutual exchange of ideas through HQMC Information Letters, (Tying simulators in pairs for air burst effect as stated by Lt Kennon is a good idea). Safety is of paramount importance. M-80 Firecrackers and simulators are excellent as compared to TNT or C-2, but not at the sacrifice thereof. Colored smoke, 3.5 rocket launchers, flame throwers as well as air strikes are most impressive.

How to acquire all this depends on the instigator of the demonstration.

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"where the future is measured in light-years"

Certainly Lt Kennon's example of his contact with the local I&I is a sufficient word to the wise. Check your local sister services for ordnance, transportation, communications and other types of support with concurrent channels for procurement.

MAJ HENRY A. CHECKLOU
Rome, Georgia.

Another Solution

... *Amphibious Warfare Tomorrow* appears to be a sound and thought provoking analysis of future amphibious warfare insofar as strategy and tactics are concerned. However, those portions relating to logistic support do not provide an adequate solution to this problem. For example, Col Cushman states that *the only solution is supply direct from the water to the using unit, and this can be done only by air*. This is based on the premises that large dumps ashore incur an unacceptable risk, and small dumps are unacceptable because of manpower requirements for handling and guarding supplies.

I am convinced that the solution to the logistic support problem presented is not the *only* solution. To base our supply system entirely on floating supply ships would be foolhardy. Ships at sea would certainly be not only easier to locate and destroy than small, camouflaged and well dug-in supply dumps ashore, but also to submarine attack, and to weather conditions which could make it impossible for them to unload their supplies.

Granted we cannot afford to establish large supply dumps ashore in the vicinity of the beach as we did in WWII. However, it is entirely practicable to establish a level of several days of supply ashore in a number of separated sites using helicopters and amphibious vehicles for the ship-to-dump movement of supplies. This will eliminate beach congestion, and make such dump sites relatively unprofitable atomic targets. By reducing the supply level ashore, and eliminating beach transfers, the number of personnel required to handle and guard the supplies should be far less than in past operations. Resupply to maintain prescribed levels may be delivered by helicopters or amphibious vehicles from ships at sea, from beached landing ships, or by air-dropped or airlanded supplies delivered by transport aircraft. Delivery of supplies to battalions and other troop units ashore may be effected by helicopter, motor vehicle, air delivery, or other means as appropriate.

The advantages of such a system over that presented by Col Cushman are its greater flexibility and increased margin of safety.

The amphibious bulk fuel handling

system should go far toward solving the POL problem. All elements of this system are light weight and can be rapidly established ashore. Small tank farms may be dispersed to almost any extent desired. Fuel can be introduced into the tank farms from tankers at sea, beached landing ships, amphibious vehicles equipped with fuel tanks, or by helicopters carrying drums or portable fuel tanks. Aircraft, vehicles or drums may be filled directly from a number of refueling stations in the system.

Certainly our new concepts of amphibious warfare have posed some vital problems relative to logistic support which must be solved. However, these solutions must be carefully thought out and field tested before summarily discarding battle tested procedures and doctrine.

LT COL CHARLES E. WARREN
Quantico, Va.



In the Dark

... Apropos your two excellent articles in the March GAZETTE on night operations. American officers serving with the UN Military Observer Group in Palestine in 1948-49 were intrigued by the fact that both the Arabs and Jews carried out practically all offensive operations at night. The Negev Offensive of the Jewish army was a perfect illustration of a large scale-deep objective night attack.

The Jews opened this offensive with a surprise night attack against the Egyptian defense line along the northern rim of the Negev Desert. The main attack was delivered by a task force of about division size. A penetration on a very narrow front was quickly made in the Egyptian line. Infantry-armor columns rolled through this hole to exploit the initial success.

By dawn they were far in the Egyptian rear, fanning out in all directions. Egyptian units were overrun who hadn't even heard that the MLR had been penetrated. The operation soon turned into an Egyptian rout and gave the Jews complete control of the Negev. Jewish casualties were very light. Egyptian casualties and POWs were heavy. Control of the attacking forces during this night operation was excellent despite the size of the force involved, the depth

of penetration and rapidity of movement.

Sometime later, I had an opportunity to talk to the officer who planned the operation. I asked him why he had decided on a night attack when conventional military opinion would probably conclude that a night operation of its size and scope would likely go awry. He replied that complete surprise was essential to the success of the attack and the only way to gain that surprise was a night attack. He concluded his remarks with a truism that Napoleon might have included in his maxims. He said in effect, "Besides, I think it is utterly stupid to attack a prepared enemy position in daylight when he can see your attacking infantry and tanks and proceed to bring all his defensive fires to bear on them."

COL F. P. HENDERSON
Fort Sill, Okla.

... Our congratulations to Maj D. D. Nicholson, Jr for his article *SOP Night Raids*, in the March issue of the GAZETTE. His excellent and complete coverage of the basic principles makes for a ready reference for use by units in training and by schools.

As an item of interest to Marines in general, particularly those who served in Korea prior to 1953, it might be well to point out that Major Nicholson's SOP could have added a paragraph 16, to cover the subject of after-raid briefings, to be given by key raid personnel and personnel involved in the conduct and support of the raid.

This was a new twist. The above mentioned personnel were on call, prepared to go to Division, Corps and/or Army Headquarters and give a blow-by-blow account, as it were, of their encounter with the Chinese, complete with prepared maps, acetates and sketches.

As a consequence there was a more complete study of methods used in the light of results gained, by the raid personnel and the successive echelons over them. Moreover, successful techniques, as well as lessons learned, were thus made readily available to the remainder of the Army Command.

But, perhaps of equal or greater importance, the man on the MLR and outpost — the rifleman, and his supporting personnel — was given another tangible example of the genuine interest in his lot by every echelon of command.

MAJ MARSHALL SALVAGGIO
San Diego, Calif.

Pierce's Product

... Congratulations to Maj Philip N. Pierce on his *Blueprint for Publication* in your April issue.

Immediately after reading the article

ON THE JOB not "on the way"

Technician operating an aerosoloscope, or germ-counter, new Army Chemical Corps device for measuring germs, radioactive and other airborne particles.



This ingenious device will add immeasurably to both civilian and military safety in the event of germ warfare . . . but it is useless

without a skilled technician on the job to operate it. That's one reason why specialists are flown from one important assignment to another, via the Scheduled Airlines — which get them there *five times* faster than slow surface travel.

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OZARK AIR LINES
PACIFIC NORTHERN AIRLINES
PIEDMONT AIRLINES
RESORT AIRLINES

SOUTHERN AIRWAYS
SOUTHWEST AIRWAYS
TRANS-TEXAS AIRWAYS
TRANS WORLD AIRLINES
UNITED AIR LINES
WEST COAST AIRLINES
WESTERN AIR LINES
WIEN ALASKA AIRLINES

a second time, I had it routed within the section as *required reading* for all personnel. Writing within the article itself testifies to the effectiveness of the recommendations about which the author writes.

1stLT R. B. MORRISEY
San Diego, Calif.

When?

... I have been reading with great interest everything which has appeared in the GAZETTE on the new rifles. But I'm not much interested in a close comparison of characteristics. The big question is — when is the Corps going to get them?

Granting all the troubles the Equipment Board has to face, and they've had 10 years now in which to face them, the new rifle is needed now. And that also goes for a new light machine gun. If you know of any reason why they shouldn't appear until the war after next I wish you'd let me in on it.

1stLT WILLIAM C. WISELEY, USMCR
London, England.

A Solution for Specialists

Much talk is going around nowadays about leadership versus specialist training and its subsequent effect on the Corps. From my position as a Monitor in the Enlisted Detail Section at HQMC, the solution appears, to me, to retrain those personnel in the staff noncommissioned ranks (from those fields in which an overage exists at certain rank levels) into the Electronics Maintenance Field. There exists a vast pool of excellent Marines with a decade of experience in the problems of leadership behind them and from whom the Corps would receive another decade or two of invaluable service in the technical field of electronics; with the added incentive of advancement in rank, an almost guaranteed bonus for the staff or technical sergeant who chooses such a retraining assignment. Training Bulletin 3-54 is the guide for available courses of instruction and the necessary prerequisites.

CAPT C. D. FAY

HQMC

Either Is Correct

... Could you please tell me if Formal Guard Mount is executed with the Squad Drill procedures or if the ceremony remains the same.

If it is done by the new drill, what reference is there available?

TSgt GARRISON O. SCHULER
FPO, N. Y.

Ed: *Formal Guard mount may be executed with either the 13-man-squad drill or the 8-man-squad drill. FMF units normally use the 13-man drill with the 8-man drill optional. Posts and*

stations have been directed by CMC to use the 8-man drill. For reference on carrying out Formal Guard Mount with the 8-man drill see either the 1927 or 1937 Landing Force Manual. For 13-man drill procedure check the 1950 Landing Party Manual.

Wear It Proudly!

... During the past years, numerous comments have been made in our various Marine Corps magazines concerning recommendations for redesigning our Marksman's Badge. However, these suggestions for improvement of design somehow die on the vine.

The opinion of many possessors of the present Marksman's Badge is that the design lends nothing to eye appeal and/or a balanced effect on the uniform coat. For example, when worn with the Basic Badge (which incidentally is practical and good looking) with 3 or 4 qualifica-



tion bars, it creates an entirely unbalanced effect.

What is a solution?

Here is a possible redesign. It is not the intention of this suggestion to imply that it should be made more attractive to covet than our Expert and Sharpshooters' Badges. If it is not feasible to redesign the present lowly Marksman's Badge, then let's consider doing away with it entirely and let a Qualification bar on the Basic Badge suffice.

LT COL J. F. McCLANAHAN
Quantico, Va.

Arty Dept

... As one who has served both as an infantry company commander and 4.2 mortar company commander, I read Capt Paciulli's article *Fire Power Plus* (March GAZETTE) with much interest. Though I agree with the Captain in principle, I find it difficult to fully endorse his proposals designed to achieve the maximum advantage of the 4.2 mortar. I must agree with his evaluation of the capabilities of the mortar and the advantage of the artillery-trained personnel in the operations billets of the company are sound. However, I am strongly opposed to creating a segment of the artillery within an

infantry regiment. The following comments present my point of view.

1. Various essential billets within the organic structure of the 4.2 Mortar Co are filled by personnel with artillery MOS (FDC, Survey and Instrument). Forward observers, although not from the 08 field, could be trained by closer co-operation with artillery battalions. Officers assigned to the 4.2 Co could and should be schooled in artillery procedure; but to be adequately qualified, experience with a rifle company is imperative.

2. Liaison between the 4.2 Co and the artillery has already satisfactorily been co-ordinated both at the regimental and battalion level through unit SACs. (Ed: LFM 22, Co-ordination of Supporting Arms, eliminates any reference to the term SAC at regimental and battalion level. The arty, air and NGF liaison officers together with their teams will be located in, or adjacent to, the S-3 section [Operations Center] of the supported unit.)

3. Ammunition supply creates, and unnecessarily complicates, a problem if the 4.2 Co were to depend upon assistance from the supporting artillery unit. Increasing the organic transportation of the mortar company would prove a more practical and feasible aspect of ammo supply. The primary objection to this point is that any responsibility to the artillery in the rear will hamper movement of the 4.2 Co and defeat its purpose.

4. Are not the regimental S-3s and the battalion S-3s competent and in a better position to collate and to disseminate intelligence and target information to the 4.2 mortar company?

5. Any additional tie-in of communications as the Captain advocates would hamper rather than help all concerned. The communication facilities of the 4.2 Co are adequate to fulfill the missions it is assigned. They would not be if the artillery were to burden the company with additional communication responsibility.

If my information is correct, artillery advocated similar adaption concerning operation of the 81mm mortar platoons in 1942 or 1943. With all due regard to the Captain's point of view, and with acknowledgement to artillery's fine supporting fires, let's not keep trying to reduce infantry to reliance on slingshots and knives to perform their primary mission.

CAPT W. E. OVERGARD
Parris Island, S. C.

... By all means, let's get more fire support for the infantry. That's one subject about which no one can have any argument. Let's give them as much as they need, the only question being how to accomplish this best.

The mortar is a weapon designed for one purpose: to put out a maximum number of rounds in a minimum amount of time—let's stress minimum amount of time and then look at some of Capt Paciulli's arguments.

The 4.2-inch mortar is an infantry weapon, operated by the infantry, for the infantry. If it did become an artillery weapon, wouldn't it still be attached to a regiment whenever it was put to use? Why then, should we take a regimental commander's mortar away with one hand, only to hand it back to him with the other. There is no better way to develop good team work than to work together constantly with the same people. Could this be done if the weapon were artillery controlled?

The question of training officers was next brought up by the Captain. The idea of 60mm and 81mm mortar training not being sufficient for the purpose of running a 4.2-inch mortar company is essentially true, but after all, aren't all mortars basically used in the same fashion? The mortar is a weapon specifically designed for area targets, and not for the purpose of pin pointing some minute object on the ground. As an old Gunnery Sergeant once said, "What I want with all that gear? Give me a slide rule, range and deflection fan, and a couple of pins and I'll get the rounds to where they're supposed to go!"

Another statement of the Captain's I would like to comment on, concerns communications. At present, they are adequate for the manner in which they are used. If, however, as the Captain advocates, we were to maintain communications with all echelons within the regiment it would be necessary to triple the present allowance of communications equipment now on hand in the companies. This, in turn, would increase the ever present problem of transportation.

The 4.2-inch mortar company is in the hands of the people for whom it was designed. It is accomplishing its purpose in a satisfactory manner. Why not leave it where it belongs and is?

1stLt F. ZIMOLZAK

USS Randolph (CVA-15)

Pit-falls

... In the course of joining some 150 trainees I have just finished inspecting their rifles for page 20 (Record of individual rifle issue, inspection, recovery) entries. During these inspections something has come to my attention that to me has always been the product of some old salt's sea stories. A surprising number of these page 20 bore-condition-entries reading something like this: *Slight pit 2 inches from muzzle at 6*

o'clock, or, Badly pitted 1½ inches from muzzle.

Now I looked through these same bores and, just to check, had two other company commanders do the same. The somewhat awesome results were—you guessed it, just tool marks, nothing else. Someone has been reading the gas port for a pit again.

The bad thing is that the original entries were made at a training base that is supposed to be first rate and squared away. Maybe the culprit has fatigue or eyestrain. At any rate, it would be deeply appreciated by those of us who have to make further entries if the originals were made with a little more care.

2dLt R. M. McCULLOH

Camp Lejeune, N. C.

Armor Dept

... I have noticed increasing interest in armored tactics in your pages, and as an ex-Sgt of the Armored Command WWII, would like to put my oar into the discussion.

LtCol Aldridge was very correct in his fine article on armor in the amphibious assault. Armored units should *never* be committed in cramped quarters nor piddled away on one, two or three-tank missions, nor should they be used as antitank devices. . . . I think your answer for amphibious purposes would be

the recoilless weapons mounted in something like the Bren gun carrier—fast, reasonable flotation and easy to conceal and cover.

Defense against tank-infantry teams should primarily be directed against the infantry for no tanker will proceed when he has lost his eyes—the supporting infantry. Unfortunately, most commanders will scream for armored assistance when first sighting a tank-infantry attack coming his way. Better to call for air bursts if available; better still teach his people what to do when overrun by enemy tanks. We had regular drills for this. Fear of the enemy tank will be worse than the fire from the tank, at close range anyway. There will never be a better means of defeating attacking armor than an educated infantry backed by good AT teams (please note, I said "good," not necessarily excellent).

The greatest advantage we can gain will come from assigning our small unit leaders to armored units to learn the limitations of armor. Do that and perhaps we can get back to the idea that a tank is still nothing but an armored artillery piece self propelled, designed for the close support of the infantry and not another damned super weapon.

DOUGLAS J. CRAIG

San Francisco, Calif.

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☛ **Capt Stephen Sedora**, author of *The Clerical Pyramid*, page 50, has been a muster roll clerk, company clerk, 1stSgt and SgtMaj since he entered the Marine Corps in 1940. During his 15 years as a Marine, Capt Sedora has held every administrative job in the battalion. Part of the first group of men assigned to the MRI field, he was commissioned



CAPT SEDORA

(LDO) in June 1951 at Camp Lejeune. In August 1951 he was transferred to MRI, Quantico as Assistant Machine Accounting Officer and was made MAO in March 1952. Now assigned duty with Machine Accounting Section at HQMC he has been attending the University of Maryland (College of Special and Continuation Studies) in his spare time.

☛ **Capt Robert L. Johnson** returns to the pages of the GAZETTE with *... and Belleau Wood*. He gave as his reason for writing this article, "I became interested in this at the time I was appointed Custodian of the Belleau Wood Memorial Fund. I felt that while most Marines were aware of the battle, few actually knew much about it. It is one of the brightest chapters in the history of the Marine Corps."

☛ A tour of duty as S-3 with the 7th Marines in Korea and the Chosin withdrawal gave **LtCol Henry J. Woessner II** his idea for *Check Points*. Currently attending the Senior School at Quantico, Col Woessner is a graduate of the Naval Academy (1941) and Base Defense School. He was tactics instructor in the Senior, Junior and COM Officers' schools, Quantico. His duty assignments included CO, MD, USS *Baltimore*, Defense Bns, S-4 2d Prov Mar Regt, G-4 Noramex, and CO of MB Argentina.



MR BRESSOUD

via the V12 program in 1944. His first combat engagement on Okinawa gave him a Purple Heart and a one-year sojourn in the hospital. Released to inactive duty in 1946 he went back to layout and art direction. The Korean situation called him back to active duty in January 1951 as a company officer and company commander in the 2d Mar Div. Resigning his commission in 1952 for business reasons he returned to Bethlehem Steel. When asked what prompted him to write his article Mr Bressoud stated, "Function of the regiment seemed vital to me—I also disagreed with much that has been written."

☛ Now serving at HQMC **Capt Verle E. Ludwig** got his idea for *Korea's Contribution to Medicine* while serving with the Informational Services Section, 1st Mar Div. Proximity of the Division Surgeon to the ISS resulted in a mutual exchange that led to the article. Commissioned through the V12 program (Notre Dame) in 1944 Capt Ludwig went through PI and the 2d Special OCS at Lejeune before he joined E-2-7 at Pavuvu. Then as a rifle platoon leader on Okinawa he received the Purple Heart. Separated from the



CAPT LUDWIG

Marine Corps in February 1946, he re-entered the reserves in 1948 and was recalled to active duty March 1951. For a writing background he lists a Journalism degree from Indiana University, news report-

ing and minor articles for trade publications.

☛ **Lynn Montross** again brings GAZETTE readers a fine article — *Devel-*

Now holding down the art and layout director's job for Bethlehem Steel, former **Capt Marius L. Bressoud Jr** made a hit with his first article for publication, *Health to the Regiment!* He was commissioned

opment of Our Body Armor. Mr Montross has written many books on military subjects, among them: *Cavalry of the Sky*, *War Through the Ages*, *Rag Tag and Bobtail* in addition to articles for leading magazines. He started his writing career on a Chicago newspaper and in 1950 was appointed historian in the Historical Division G-3 HQMC.

☛ A background of writing for newspapers and radio prompted **Capt Owen J. Cone** to write something on the military angle. He came up with *Kubli Khan's Beachhead* on page 38.



CAPT CONE

Commissioned in 1943 Capt Cone attended Field Artillery School, Naval Gunfire School and served as a Naval Gunfire spotter with the 4th ASCO, 5th Mar Div July 1944 to December 1945. Released to inactive duty, he is presently employed by the Columbia River Constructors.

☛ Five years as an enlisted man and five years as an officer gave **Capt John L. Lowe** background material for *To Hell With Rotation*. Enlisting in June 1945 Capt Lowe went from Parris Island to the 1st Mar Div in China and from there to Great Lakes. Duty in the Canal Zone, and Camp Lejeune followed. He received his commission in June 1950 at Quantico and his first tour as an officer was at Camp Lejeune as a platoon leader. He went to Korea in November 1952 and joined the 7th Marines. Later he became ExecO of Recon Co. Returning to the US in October 1953 he reported to the 1st Recruit Bn, at Parris Island, where he is presently stationed.

AUTHORS

GAZETTE has in the past, and will continue in the future, to have articles cleared by the proper agency. However, under the provisions contained in ALNAVs 17 & 20 it will now be necessary to furnish a minimum of 3 copies of each manuscript submitted.

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By Lynn Montross

DEVELOPMENT OF OUR BODY ARMOR

Navy Doctors, pioneering at the Naval Medical
Field Research Lab, produced a vest that saved
the lives of hundreds of Americans in Korea



IT HAPPENED ONE MURKY NIGHT in the spring of 1952. A reinforced squad of the 1st Bn, 1st Marines, was picking its cautious way toward outpost positions when all hell broke loose. Several enemy mortar rounds landed with earth-jarring crashes. Then came a deadly shower of hand grenades, followed by the dim figures of Chinese Reds closing in with burp guns for the kill.

Ambushes of this sort were likely to occur any night on the I Corps front in west Korea. Only recently the 1st Mar Div had moved all the way across the peninsula from the "Punchbowl" area of the X Corps front. The new Marine sector was the western anchor of the Eighth Army, blocking the enemy's invasion route to Seoul. Both sides were dug in solidly, and tactics consisted chiefly of the artillery duels and patrol clashes of outpost warfare.

On this occasion the Marines had been taken by surprise, despite good precautions. The enemy was clever at concealing himself and springing an ambush when least expected. Yet a moment later it was the enemy who was surprised! Although his preliminary mortar rounds and grenade bursts should have taken the fight out of the Marines, they put up an immediate resistance. And though the CCF burp guns should have finished the job, the hail of large-caliber slugs didn't stop the Marines. On the contrary, they cut loose with such hot BAR fire that the Chinese soon had enough. It was all over in a minute and the attackers vanished into the darkness, leaving their dead behind them.

There was nothing mysterious about it. The Marines were wearing a new type of plastic, light-weight body armor, designed to stop most of the artillery, mortar and grenade fragments causing two-thirds of all serious infantry casualties. Even the low-velocity firearm bullets seldom penetrated, and the men picked burp-gun slugs out of their armored vests after this fire fight.

Of the 20 men in the reinforced squad ambushed by the Chinese, 9 were wounded by mortar and grenade fragments, but these were chiefly light wounds in the unprotected arms and legs. It was definitely established that at least 2 men would have been killed except for

their armor. Among the 11 unwounded men, moreover, the prevalence of imbedded burp-gun slugs and armor plates bent and crumpled by mortar fragments testified that few if any of these Marines would have kept a whole skin without their vests.

Not only had the new armor made light wounds out of potentially serious and fatal wounds; it had *prevented altogether* a number of wounds. Thus it is the opinion of many high-level officers of the Marine Corps that such protection is one of the most revolutionary tactical advances of the present day.

The advantages offered by body armor to attacking forces are of particular appeal to the Marine Corps in view of its traditional preference for the offensive. While the vest is a protective device, its greatest usefulness is in offensive action. On the defensive, troops can find protection in dispersion and in field fortifications. But when men are moving forward in the attack, they are most exposed. The vest, then, is in effect an offensive weapon making it possible for our troops to carry out attacks which would not otherwise be feasible.

Such potentialities are the more remarkable because of the low cost of body armor. The total investment so far, in terms of money and personnel effort, amounts to chicken-feed in contrast to the billions spent for atomic weapons.

Despite the popular belief that body armor went into decline along with the knight in chained mail, modern tacticians have recognized the need for protection against weapons of gunpowder. Several types of breastplate were worn in the American Civil War; and though tested by the Union Army, they were never officially adopted. D. and G. Cook Co., of New Haven, Conn., advertised a "soldier's bullet-proof vest" in *Frank Leslie's Illustrated Newspaper*. It consisted of "two thin pieces of spring steel, one on either side of the chest." When the vest was buttoned, the plates overlapped in the center.

Confederate soldiers had to be content with home-made products and several ingenious examples are still to be seen in museums. On both sides, however, the infantry

soldier usually threw his breastplate into the ditch after a few forced marches in summer heat.

It has been the experience of all ages, in fact, that infantrymen find mobility a better protection than armor when it is heavy enough to fatigue them and hamper their movements.

Steel helmets had their inception in World War I when General Adrian of the French army interviewed a soldier who survived a lethal shell fragment because he placed a metal meat pan under his cap. The idea of fragment-proof helmets found such universal favor that soon all the armies of the Western Front were equipped with head protection which undoubtedly saved thousands of lives.

Not until the post-war years were new plastics developed which made possible the body armor of World War II. As early as 1938, the possibility of using textile materials was established by experiments of Naval Research Laboratory in a study sponsored by BuAer.

Industry worked hand-in-hand with the military as scientists of the DuPont and Dow Chemical plants made valuable contributions. When World War II broke out, efforts were co-ordinated at NRL by the Plastics Army Technical Committee.

A new type of plastic armor was developed by this committee. Further research brought forth new resins to bond the glass cloth effectively at a wide temperature range, and these glass-plastic laminates were known as Doron, Type II.

It was found that 1/16 inch plates consisting of 8 layers were sufficient to stop a .45 caliber automatic pistol bullet with a velocity of 800 feet per second, or even a bullet from a Reising sub-machine gun at 1,150 feet per second.

Casualty statistics from World War II indicated that this amount of protection held great potentialities for saving lives. The following data, compiled from many thousands of case histories, shows the regional frequency of wounds:

	WIA	KIA
Head	10%	20%
Chest	10%	50%
Abdomen	10%	20%
Upper Extremity	30%	05%
Lower Extremity	40%	05%



Dr Corey was the target, Dr Webster fired the shot . . .

A survey of these statistics gave researchers the hope that the right kind of body armor might save more than half of the lives lost from fatal wounds. There was the further possibility of reducing a large portion of serious wounds to light wounds, and of preventing many wounds entirely. Not much could be done about rifle and machine gun casualties, since any armor capable of stopping high velocity bullets would be too heavy to be practicable.

Tactical as well as humanitarian values entered the equation. Considering that the evacuation of a critically wounded man from the firing line often requires the aid of several comrades, it was plain that body armor could add enormously to the effectiveness of an operation. Equally obvious was the prospect that troop morale would be boosted if protection could be achieved at no excessive cost in comfort and mobility.

Doron II was described as "a glass fabric-plastic laminate, bonded at high pressure. In the thickness finally decided upon as most practicable ($\frac{1}{8}$ inch), the armor weighs 4 lbs. and covers a body area of 3.5 square

feet. This armor has repeatedly resisted the impact of .22 and .45 caliber bullets fired from automatic pistols, the Thompson sub-machine gun and the Reising sub-machine gun at a distance of 15 feet. Recent tests made by the Marine Corps Equipment Board have shown, moreover, that this armor stops all fragments from a detonated hand grenade (TNT-loaded) at a distance of 3 feet. In brief, the $\frac{1}{8}$ inch Doron is equivalent or superior to the M-1 steel helmet as regards resistance to missiles."

This Navy description did not mention that early tests of Doron included a human target.

Dr Corey, a NRL researcher, used his left hand, protected by a slab of Doron backed by one inch of sponge rubber.

The outcome was even something of an anticlimax, making it appear that legends about the shock-power of the .45 automatic were far-fetched.

The bullets were literally picked out of the air and caught as if catching marbles flipped at the hand. When the backing was reduced to a single thickness of duck, severe bruising resulted, with hematoma,

pain and edema, but without fracture.

The first military benefits of Doron went to aircraft pilots and crewmen, who could tolerate much heavier armor than infantrymen. Flak suits and curtains were manufactured in 1944 for Navy, Air Corps and Marine personnel.

The results are now history. A decrease of 50 per cent in personnel losses as a result of flak suits and curtains was claimed by the Eighth Air Force alone during the war, and many casualties were saved among Navy and Marine fliers.

Fashion Frocks, the women's garment manufacturer who made these, offered to turn out a modified flak suit for ground force troops, but the weight seemed excessive to Marine officers. The preference of BuMed was for the so-called Webster Prototype. This was simply the familiar Marine utility jacket, modified at the suggestion of NRL researcher Dr Webster, so that curved slabs of Doron could be inserted in cloth sheaths to protect the abdomen, chest and back.

Modern body armor took another step toward realization when RAdm Ross T. McIntire (MC) USN recommended to the Commandant of the Marine Corps in the summer of 1944 that the Webster model be adopted by the Marines for combat use in the Pacific.

Three days after the receipt of this memorandum, CMC requested from the Quartermaster General of the Marine Corps a comment on factors involved in the modification of the utility jacket. The reply stated that no serious manufacturing difficulties would be encountered. It was estimated, however, that the time for fabrication would be doubled and that 50 per cent more materials would be required.

On 14 July QMGMC informed CMC that field reports from the Pacific had stated that the utility jacket was already considered too heavy for tropical wear. "With the additional weight and heat which will result from the double thickness of the material and the armor slabs," continued the memorandum, "it is doubtful if such a garment is practicable."

Marine adoption of the jacket was delayed until the following spring

by further doubts of a tactical nature. Mobility was essential to landing force troops hitting the beaches and increasing the weight and warmth of the old utility jacket offset many of the advantages of protection.

Planning for Iwo Jima and Okinawa brought added delays; and it was not until March 1945 that CG FMFPac informed CG 3d Mar Div that his unit had been selected for a test of 2,000 armored utility jackets in combat. An informal Navy-Marine board had recently met at Camp Lejeune to test the mobility and maneuverability of troops wearing the armor. Adoption was recommended, though the latest Marine Corps Equipment Board report on Doron paid faint praise as compared to BuMed statements.

CMC requested in a memorandum of 16 March 1945 that BuMed send officers to observe the forthcoming combat tests of the jacket. And on 19 April a memorandum from FMFPac notified CG 2d Mar Div that his unit, instead of the 3d Div, was to conduct the test with an infantry battalion in the then current Okinawa operation.

The stage was all set when the curtain came down on the final large-scale infantry operation of World War II. Thus the Board admitted in its interim report to FMFPac on 23 July 1945 that there had been no opportunity for an actual combat test. By the time the 2d Mar Div received the jackets, tactics had been reduced to the last stages of the mopping-up phase.

Several minor improvements were suggested by 2d Mar Div men who wore the garments on reconnaissance patrols. But it is perhaps needless to add that the body armor project came to an abrupt halt with the world at peace.

The marvel is only that renewed consideration was given to body armor as early as 1947. A recent survey by CNO had revealed that all efforts in this direction had ceased after WWII with the disbanding of JANPAC—the Joint Army and Navy Plastics Armor Committee. But there were still men who believed in modern body armor. And it fell to the US Navy and Marine Corps to pick up the pieces in 1947 and start all over again.

Hopes for the future were centered in the 4-year-old Naval Medical Field Research Laboratory (NMFRL) located at Camp Lejeune, NC. This was a joint Naval and Marine project founded primarily for experiments to strengthen Marine amphibious tactics. Troops of the 2d Mar Div were available for tests, since it was recognized that psychology entered into body armor problems as well as physics and physiology. The finest armor, the best ballistics characteristics are useless unless the man can and will wear that armor.

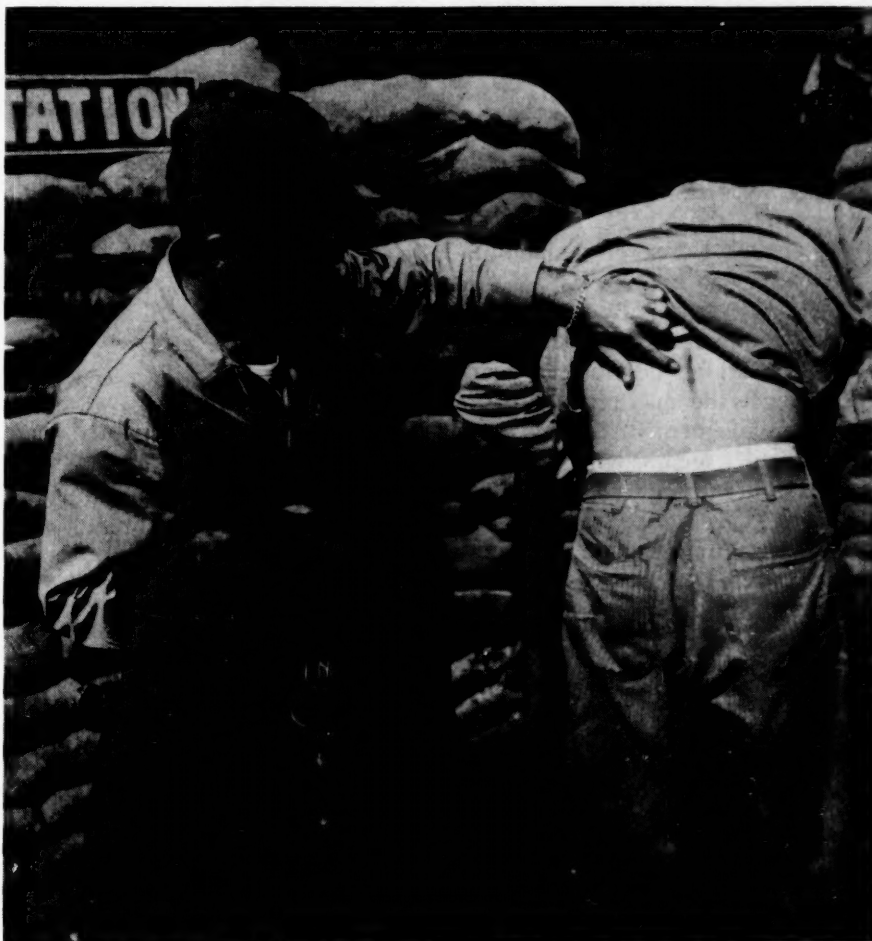
There was at this time no other laboratory in the entire Department of Defense where scientists and engineers had all the necessary facilities for developing armor to meet all military requirements and evaluating it in connection with the human body. The new NMFRL center set itself the task of co-ordinating the studies of tacticians, physicists, physiologists and psychologists. The US Navy and Marine Corps took a position of world leadership over all other military organizations in the

development of modern body armor.

Several prototypes of body armor, fabricated by NMFRL, were evaluated by MCEB and the 2d Mar Div. Two models showing promise had been further refined when war broke out in Korea. They were submitted to MCEB in August 1950, and action to procure a small number for tests was initiated by the Joint Army-Navy Mission, Medical Research and Development.

After commitment of the 1st Mar Div to Korea, 500 armored utility jackets of WWII vintage were supplied by NMFRL for a combat test. They had been tested previously by MCEB and found wanting, but at least they had the merit of being available.

Each infantry regiment received 150 garments and the remaining 50 went to Recon Co. The jackets of the 1st and 7th Marines were misplaced during the move from Inchon to Wonsan and never recovered. Troops of the 5th Marines had no combat experience with the jackets before they were destroyed to keep them from falling into the enemy's



... but in Korea it wasn't an experimental shot

hands during the Chosin Reservoir breakout.

Only the jackets of Recon Co had a limited test. Three armored men were wounded early in November in unprotected parts of the body.

A poll of others revealed that movement was restricted, the plates pushed up so that they had difficulty in firing from the shoulder. All agreed, however, that the armor had a virtue never intended by the NMFL — if the plates were heated over a stove in sub-zero weather, they kept the wearer warm for hours!

The next chapter of the Marine body armor story begins in the spring of 1951, when the Joint Army-Navy Mission decided to initiate a new test in Korea. Forty sets of pull-over type of prototype jacket, incorporating the latest modifications, were fabricated by NMFL for delivery in June.

Three infantry regiments were selected for the tests—the 5th Marines of the 1st Mar Div, and the 23rd and 38th Regiments of the 2d Inf Div of the US Army. The locale was the Punchbowl and Inje areas of the X Corps front in eastern Korea, and tactics consisted of defensive actions and patrolling.

Commander J. S. Cowan (MC) USN and LCdr Frederick C. Lewis (MC) USN, the designer of the armor, were the NMFL representatives sent to Korea on a 3-month tour of duty to observe both Army and Marine tests. By keeping a limited number of jackets in constant circulation, these officers managed to get the maximum amount of wear. Riflemen, BAR men, mortar (60mm) men, light machine gunners and radio men were selected as wearers, each carrying his basic weapon, ammunition load and a one-meal ration.

The new prototype vest, after many modifications, was to be known as the "Vest, Armored, M-1951." It consisted of a zippered, sleeveless jacket "constructed of water resistant nylon incorporating two types of armor. One, a flexible pad of basket-weave nylon, covers the upper chest and shoulder girdle; the other, overlapping Doron plates, covers the lower chest, back and abdomen. These Doron plates consist of several layers of fibre glass cloth, bonded

or laminated together with a resin."

As a result of the Korean tests, Cowan and Lewis concluded that "body armor, or protective clothing of some type for the vital automatic areas, is almost unanimously desired by all combat troops, particularly the combat veterans of several actual fire fights with the enemy."

Line officers agreed that the vests had a good psychological influence on morale. The weight was not considered excessive because of its even distribution. But there were many complaints of excessive body heat while wearing the armor in Korean summer weather.

As their final conclusion, Cowan and Lewis asserted that "adequate testing under conditions of combat resulted in each instance in the infantry battalion commander expressing a desire that the armored vest be adopted as standard and be made available as quickly as possible to combat units."

NMFL responded with a more advanced prototype of Armored Vest M-1951, modified on the basis of the Korean tests as well as experiments with troops of the 2d Mar Div. And on 16 November, in a letter to the Quartermaster General of the Marine Corps, CMC approved the standardization and procurement of 500 vests to be air-shipped to Korea before 30 January 1952.



Doron—fibreglass bonded with resin

All was not smooth sailing. Difficulties were encountered in getting commercial bids because of the close tolerance required. Changes in design, initiated by the Depot of Supplies to speed up manufacture, had brought the weight of the vest up to nearly 10 pounds.

This revelation drew fire from LCdr Lewis, who asserted that NMFL would never approve such a heavy garment. Not much time remained before the Commandant's deadline, but Lewis hurried back to re-design the M-1951 so that it weighed only 7¾ pounds without sacrificing protective values.

The new vest was put immediately into production and beat the deadline by a week—the last of the 500 vests were on their way to Korea by air on 25 January 1952.

Two commercial contracts were signed meanwhile.

It had been decided that a Marine project officer should follow the 500 vests to Korea "for purposes of indoctrinating the people who are to wear the vests and to observe the results of the test."

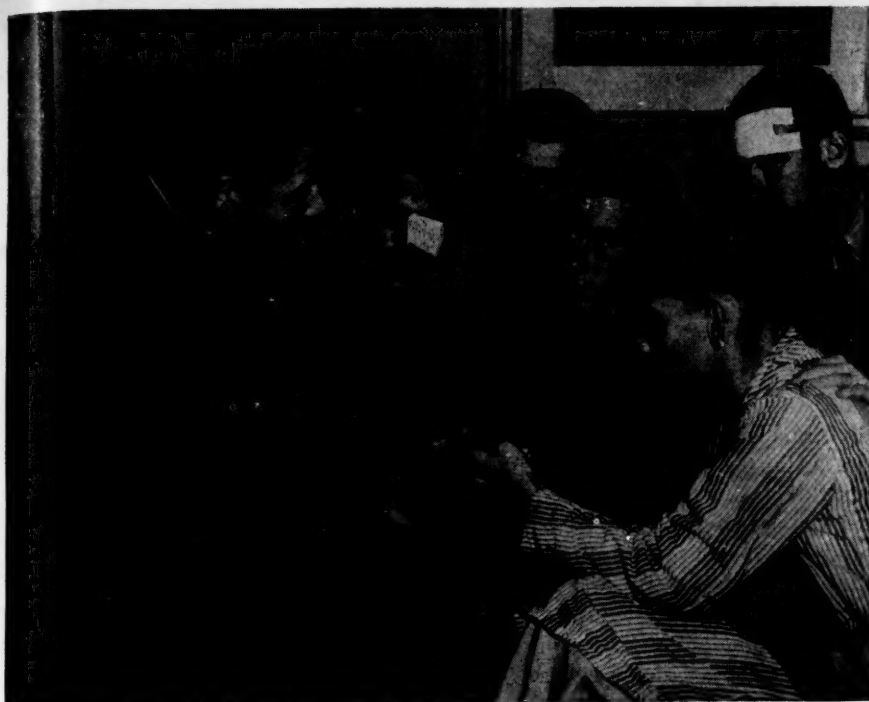
After his first week with the troops in the Punchbowl area, he wrote:

"Up to tonight we have had 9 men hit while wearing the armor. One was killed outright when a 120mm mortar shell landed right in his lap—however, the other 8 showed excellent results. All of the 8 were wounded in other places not covered by the vest—but they are all WIA instead of KIA."

There could be no doubt that the M-1951 vest had made good when further reports came in from Korea. All 3 battalions of the 1st Marines were represented in a survey made under combat conditions in the spring of 1952. The 1st Mar Div was then occupying a sector in west Korea, with the tactics consisting chiefly of the artillery duels and patrols of outpost warfare.

The report of the 1st Bn disclosed that of 87 men exposed to enemy fire while wearing the vests, 27 had been wounded. Fourteen lives were saved by the garments.

The 2d Bn reported 16 men wounded by grenade and mortar fragments, none of whom had been hurt in bodily areas covered by the vests. Yet one Marine had stopped so many mortar fragments that his



Dr Lewis (left) — he took a load off their backs

vest "looked like it had been hit with buckshot."

Seven men of the 3d Bn were wounded on outpost duty while wearing the armor. "All were available for interviews," he commented, "and it was the opinion of each that the fact that they were wearing the jacket at the time of injury saved them from far more serious injury or possibly from death. An additional 15 men were wounded, who, it appears from a diagnosis of wounds received, would not have been injured had they been wearing the subject vest. . . . A sufficient number of jackets were not available at the time to equip all personnel of the battalion on line."

During the summer of 1952 the benefits of Marine body armor were extended to soldiers of the Eighth Army. The principle was established in a letter of 26 June when QMGMC informed the Quartermaster General of the Army that "the Marine Corps is more than willing to make the necessary arrangements in order to expedite the delivery of the vests to front line [Army] troops in Korea."

The Army requested 13,000 vests at the outset and was informed that 4,000 would be furnished immediately out of the 6,500 on hand. Half of the Marine production thereafter would go to the Army until the order was filled.

Production was to continue until enough vests had been accumulated for 3 Marine divisions and as many air wings. Despite the good record made by the M-1951 in Korea, criticisms were invited from officers and combat troops at the front. With such comments as guidance, 200 vests were modified and shipped to Korea in September 1952. Officers reported that the new vests tore too easily at the seams, as a result of poor stitching which resulted in plates shifting out of position. Two small unprotected areas had been discovered, and the garment did not hang properly except when its wearer stood in an erect position.

These are samples of the criticisms which resulted in further changes being incorporated by Lewis and his NMFRL colleagues in an improved design known as the M-1952. The Marine Corps had never tried to "sell" the armored vest to combat troops, and the specifications for the M-1952 included a label calling attention to limitations as well as advantages. It was to be printed in letters not less than 1/4 inch in height and stitched to the inside of the garment.

The possibility of supplementing the M-1952 with armored protection for the groin and lower torso was suggested by Marine officers in Korea. Lewis explained that the NMFRL had "designed and at-

tempted to design many models of groin protectors with little success. The only type which may be worn with any degree of comfort is a type modeled after the metal athletic supporter; however, it must be worn under all clothing. If it is worn over clothing, the resulting bunching of the clothing causes chafing after short periods of wear. This precludes the possibility of attaching this type of supporter to the armored vest."

A solution was found, after much experimentation at Camp Lejeune, in "a prototype of groin and kidney area armor which will be fabricated from ballistic nylon. This armor will be worn around, and suspended from, the waist of the wearer. It will be designed so that the armored vest will overlap the garment at the waist."

The new torso armor resembled a pair of shorts and weighed about 3 pounds. Four hundred sets were air-shipped to Korea early in 1953 for a 100-day test by the 1st Mar Div. They were reported on favorably. CG, 1st Mar Div asserted that "in general there appears to be little or no loss of operational efficiency. . . . The psychological effect is very favorable. Increased confidence and aggressiveness have resulted."

After being modified with suspenders replacing the elastic cord, the new "Armor, Body, Fragmentation, Type Lower Torso, M-53" was standardized on 18 June 1953 and put into production.

On 27 July 1953, the date of the cease-fire in Korea, the Marine Corps had under procurement 58,000 sets of torso armor. Production of the standard M-1952 armored vest had been speeded up to 3,500 and even 4,000 a week in an effort to satisfy both Army and Marine needs.

By the early months of 1953 the Army had requested enough vests to bring its total up to nearly 63,000 for the entire war. Combat troops in Korea had priority, so that of the 3 Marine divisions the 1st was the only one to receive its full authorized quota of 24,000 vests, including replacements.

In spite of the combat results, body armor was little known to the American public, as compared to other military developments, at the time of the cease-fire in Korea. Newspaper announcements often

consisted of a feature article on page 7, accompanied by a photograph showing PFC Joe Blow grinning gratefully while pointing to the bent and crumpled armor plates which saved his life.

The term "bullet-proof vest," long a subject of ribald barrack-room jokes, was sometimes applied to the new armor by civilians. Few of them suspected that one of the most far-reaching tactical developments of the 20th Century was in the making—an innovation capable of reducing the effectiveness of enemy low-velocity missile weapons by as much as 30 to 80 per cent, depending on combat variables.

Even less did these civilians suspect that modern body armor probably ranked as the most economical of all great tactical developments. Where atomic weapons had cost billions and combat helicopters well up in the millions, the thousands invested in Marine body armor amounted to scarcely more than the value of the ammunition for a single large scale artillery barrage!

By the summer of 1953, indeed, the cost of a Marine armored vest had been brought down to \$37.50 by virtue of mass production. Probably never before in modern military history has a development of such tremendous tactical potentialities been produced by so few men at such small expense to their country.

There could be no doubt that a major tactical innovation was in the making. Yet Marine body armor received surprisingly little notice during the operations in Korea. Although more than 93,000 vests were issued to US Army and Marine units down to the cease-fire of 27 July 1953, the full significance of the development was not grasped by a great many military men, let alone civilians.

Only a relatively few officers and scientists saw the big picture clearly enough to realize that large-scale adoption of body armor was capable of revolutionizing modern warfare. For if this protection could make possible a reduction of 50 per cent in fatal and serious wounds, it would mean in effect that half of the enemy's most dependable antipersonnel weapons had been rendered ineffective.

Or, to put it differently, the enemy

in order to get the same destructive effects must increase his fire by 100 per cent. This means doubling the number of weapons or their rates of fire, the ammunition supply, the number of trucks, the supply troops, the capacities of roads, rail systems and production facilities.

The need for modern body armor had been recognized in World War I, but not until World War II did advances in plastics lead to the development of Doron. This was unfortunate, since casualty figures of 57 US divisions in the ETO indicated that the infantry, comprising 68.5 per cent of the strength, suffered 94.7 per cent of the personnel losses. Another ETO survey established that shell fragments caused from 61.3 to 80.4 per cent of the wounds.

It remained for the US Navy and Marine Corps, which had taken the lead in World War II, to resume their body armor studies in 1947. The NMFRL became the only laboratory in the entire Department of Defense with the facilities for designing body armor and adapting it to a complexity of requirements.

At the time of the armistice in Korea, the most comprehensive figures are found in a report based upon a comparison of 1st Mar Div casualty records. The personnel losses from the beginning of the conflict to February 1952 represent a period when few Marines were equipped with armored vests. But the losses from that date until February 1953 cover a year when a majority of the combat troops wore armor.

	KIA	DOW	WIA
1950-1952	1,874 (11.3%)	362 (2.2%)	14,272 (86.5%)
1952-1953	712 (9.2%)	103 (1.2%)	6,898 (89.6%)

"There are," concluded the report, "no records to indicate what in all probability is the most significant figure—the number of cases where the wearer was hit but not did become a casualty at all."

It must be remembered, however, that these statistics refer to two periods when conditions often varied widely. Prior to February 1952, with a warfare of mobility prevailing, the enemy was inferior in artillery, the causative agent of most personnel losses. Afterwards, during the out-post warfare of western Korea, the

front remained more or less static, and the Chinese Reds had as much artillery support as the Marines.

Such contrasts make it evident that any over-all statistics must be taken with the proverbial grain of salt. More dependence may be placed in the judgment of the men best qualified by experience and observation to evaluate Marine body armor.

A "before and after taking" analysis from a medical viewpoint is supplied by the comments of Capt Louis P. Kirkpatrick (MC) USN. As surgeon of the 1st MarDiv in Korea, he made a study of battle casualties before and after the issuing of armored vests.

"After receiving sufficient vests for each man on the front, the chest and abdominal wounds were reduced some 90 to 95 per cent. Prior to the introduction of the armored vest, approximately 80 per cent of all battle casualties resulted from wounds suffered in the area covered by the protective armor. It is estimated that well over 60 per cent of those wounded would have been either KIA or DOW. . . .

"During one weekly period of April 1952, 24 amputations were performed but not a single chest or belly case was admitted. Before the vest, our surgical teams averaged over 50 abdominal cases each week. Another salient feature was the reduction in the number of pints of whole blood for the entire division following the advent of the armored vests."

US Navy and Marine armor studies have continued without interruption at Camp Lejeune since the armistice, with the NMFRL researchers working on a score of related projects.

Some day in the future a monument or at least a bronze plaque may be dedicated at Camp Lejeune to commemorate the development of the first practicable infantry body armor of modern military history. It would be appropriate if the inscription paid tribute to a great tactical and scientific achievement. But perhaps it would be just as fitting to mention simply that hundreds of Americans who fought in Korea—US Army infantry as well as Marines—owed their lives to the research conducted at the Camp Lejeune ballistics center. US MC

THE UNITED STATES MARINE CORPS ASSOCIATION

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The purpose for which the Association exists is to disseminate knowledge of the military art and science among its members, and to provide for their professional advancement; to foster the spirit and preserve the traditions of the United States Marine Corps; to increase the efficiency thereof; and to further the interests of the military and naval services in all ways not inconsistent with the good of the general government. Article I, Constitution of the Association.

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Founded 25 April 1913 by John A. Lejeune at Guantanamo, Cuba





... and

**In June 1918, the world watched a new
Marine Brigade meet its test of combat**

d Belleau Wood

IT WAS THE LATE AFTERNOON OF the 6th day of June, 1918. In Paris, a censor was methodically deleting the names of organizations and places from a press dispatch delivered somewhat earlier by a courier. Its author was the censor's friend, the famed Floyd Gibbons, representing the *Chicago Tribune* and its associated papers. The phone rang and a voice reported that the great Gibbons was dead—lying in a grain field near the northwest edge of Belleau Wood. The shocked and saddened censor picked up the dispatch and released, exactly as it was written, the story of the attack on Belleau Wood. The news was out to an electrified world. The 4th Marine Brigade was in action! As it actually happened, Gibbons had arrived at 5th Marines' headquarters on the afternoon of the 6th of June and shortly thereafter sent his driver to the Press Bureau in Paris with a dispatch based on the anticipated outcome of the yet unlaunched afternoon attack which had the primary objective of seizing Belleau Wood and the railroad station of Bouresches. It was the purported intention of the reporter to fill in certain details of the story after the battle. But while accompanying the attacking 3d Bn, 5th Marines, he was struck in the head and left in the grain field, presumably dead. Hence the rumor of his death and the subsequent breach of censorship regulations.

The 4th Mar Brig was a war baby, conceived in the turbulent spring of 1917, following the declaration of war on Germany by the United States.

The savage and remorseless war on the Western Front had settled down to a bruising stalemate, and on the Eastern Front, Czarist Russia tottered on the brink of destruction.

The Allies were slowly bleeding white on the blood-drenched battlefields, and on the seas the lurking U-boats took their evermounting toll of men and materiel. Gloom and despair stalked across the unhappy land of France.

The ominous situation called for action and America answered the call. In order to bolster the sagging morale of the Allies, President Wilson almost immediately announced that an Army division and a regiment of Marines would be sent to France as the forerunner of the American Expeditionary Force.

The Marine Corps was faced with the instant problem of forming a regiment since all except a few of the organized companies of Marines were serving in the Caribbean area. The immediate plan was to create the 5th Marine Regiment by returning troops from the West Indies and using them as the core around which to build the war strength companies. The 1st Battalion was formed at Quantico, and the 2d and 3d at the Philadelphia Navy Yard. Sufficient officers were available to assign an experienced captain and lieutenant to each company. The remaining lieutenants were inexperienced having been commissioned from college. In the main, the noncommissioned officers were seasoned men. The privates were largely inexperienced, 2,600 having been transferred from Parris Island to fill the ranks.

On 14 June 1917 the 5th Marines sailed for France with Col Charles A. Doyen in command. LtCol Logan Feland, the second in command, had preceded the regiment to France with General Pershing and

his staff. The battalions were commanded by Majors Turrill, Wise and Westcott. Soon afterwards a replacement battalion of 1,100 officers and men, commanded by LtCol Hiram I. Bearss, followed the 5th Marines overseas and joined them to bring the regiment up to full war-time strength.

Upon its arrival in France, the 5th Marines were promptly attached to the 1st Div, American Expeditionary Force. The 1st Div, already at its war-time strength of 4 infantry regiments, began to dissipate the strength of the Marines by assigning them to various guard details in France. One company was sent to Southampton, England, a port for handling American troops enroute to France.

Fearing that the 5th Marines would be relegated to rear echelon duty, and spurred on by the eagerness of the Marines themselves, the Secretary of the Navy prevailed upon the President to approve a brigade of Marines, rather than a regiment as previously planned. Orders were at once given to organize the 6th Marine Regiment and the 6th Machine Gun Battalion. On 17 August 1917 the task was begun. Thus the immortal 4th Mar Brig was born.

The 6th Marines and the 6th Machine Gun Battalion were assembled at Quantico. Colonel Albertus W. Catlin commanded the 6th Marines and LtCol Harry Lee was second in command. Battalion commanders were Majors Holcomb, Sibley and Hughes. Major Edward B. Cole, later to give his life at Belleau Wood, commanded the 6th Machine Gun Battalion. Experienced non-commissioned officers were detailed to each battalion to provide the complements of sergeants, gunnery sergeants, 1st sergeants, quartermas-

By Capt R. L. Johnson



ter sergeants and sergeants major. The privates were drawn from every available source on the East Coast and from Mare Island on the West. It is interesting to note that 60 per cent of the personnel in the regiment were college men. While the 6th Marines lacked the initial experience of the 5th Marines, Gen Lejeune, in his autobiography, *Reminiscences of a Marine*, reported that the regiment soon found itself, and to the unprejudiced eye there was no difference between these two magnificent regiments in the stress of battle.

The 6th Marines were transported to France piecemeal, the 1st Bn arriving on 15 October 1917, the 3d Bn on 12 November and the 2d Bn on 5 February 1918. Upon its arrival, the 6th Marines went into training with the newly formed 2d Div, the 4th Mar Brig being one of the 2 infantry brigades in that division.

Brigadier General Doyen, recently promoted from colonel, was placed in command of the brigade. Colonel W. C. Neville was thereupon transferred from Peking, China, to command the 5th Marines. Finally after many months of delay, the Brigade, consisting of 280 officers and 9,164 enlisted men, was ready for the test of combat.

In the middle of March 1918 the Brigade, as a part of the 2d Div then assigned to the X Corps of the Second French Army, began its first tour of combat duty in a quiet defensive sector southeast of Verdun. It was initially planned to give each

of the battalions, in turn, about 10 days' experience in the lines and then rotate them to the rear. But on March 21 the Germans launched a fierce drive towards Amiens and the impetus of the attack threatened to drive a wedge between the French and English forces. In desperation, the French withdrew a division from the X Corps and one from the Corps on the left of the 2d Div to stop the drive. It was the old story that the Marines have learned so well. Rotation was to the front. Initiations in war are seldom subtle.

During the week 9 May through the 16th, the French relieved the 2d Div. The Germans, having almost cut the Allies in two south of Amiens, began attacking the British on the Lys and Marshal Foch was forced to order a number of French divisions which were being held in reserve to support the British. The 2d Div was ordered into a reserve position to protect Paris.

Meanwhile, BrigGen Doyen, along with a number of Army officers, was found physically unfit for active service by a Medical Board and was returned to the United States. Brigadier General J. G. Harbord, a National Army officer was placed in command of the 4th Mar Brig.

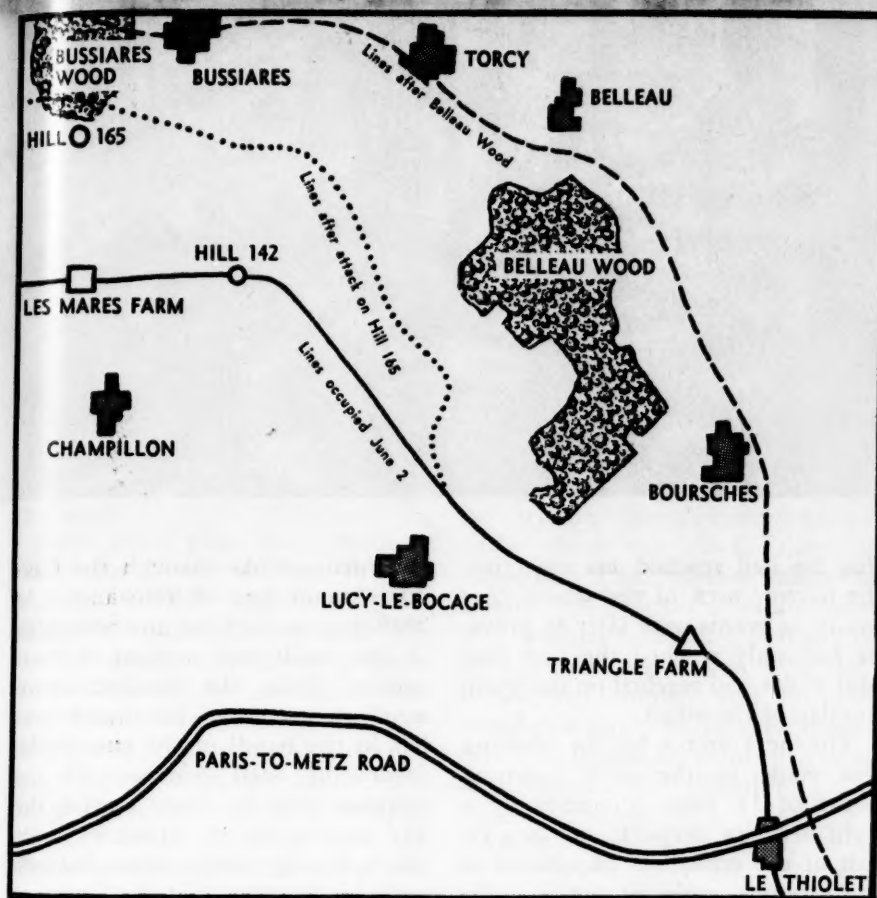
Suddenly on 27 May, the Germans launched a massive offensive on the Chemin des Dames. The weakened and depleted French and British divisions which were defending this heretofore quiet sector were rolled up like a rug and the enemy smashed on to the Marne at Chateau-Thierry. French reinforcements were unable to contain the attack. Panic and despair swept over Paris as the German war machine ground on.

On 30 May, the 2d Div was committed and ordered to proceed to Meaux on the Paris-to-Metz Road and to establish a defensive line behind the retreating French army about midway between Chateau-Thierry and Paris. The roads were so congested with fleeing refugees and soldiers that it was necessary to detruck and march to the positions which the 2d Div intended to defend.

As shown by the accompanying sketch, the Brigade occupied a line extending from Le Thiolet on the Paris-to-Metz Road northwestward through Triangle Farm, skirting the southern tip of Belleau Wood to Hill 142, and thence westward to Les Mares Farm. Two battalions of the 5th Marines and one battalion of the 6th were held in reserve. The 6th Machine Gun Bn occupied positions in the line. The Marines immediately prepared shallow positions and waited for the attack.

Throughout the 2d day of June





the remnants of a broken and demoralized French army filtered through the Brigade's lines to the rear. It was clearly evident that the German attempt on their positions would not be long in coming. At about 5 o'clock in the afternoon the attack began, hitting the 2d Bn, 5th Marines.

The Germans, flushed with victory and favored by the momentum of their attack, came down from the north and northeast, driving the French before them. They came in two columns, like automata, their helmets glittering in the afternoon sun. Suddenly the Marines opened fire with terrible effectiveness on their advancing lines. Withering rifle fire, well aimed and deliberate, slashed the attackers to pieces. Three times the Germans tried to crack through the Brigade, and each time they were thrown back with staggering losses. The German drive on Paris died in the wheatfields that afternoon.

In the succeeding days both sides were punished by increasingly heavy artillery fire, the Germans scoring with particular effectiveness from the vicinity of Hill 165 in the zone of

the French 167th Inf Div which was on the Brigade's immediate left. In order to secure stronger ground and to put the German guns out of action, the French corps commander ordered an attack on the morning of 6 June. The mission of the French 167th Inf Div was to seize the hills to their front which dominated the Clignon River from the south. The 1st Bn, 5th Marines, commanded by Maj Julius S. Turrill, and supported by the 5th Regiment Machine Gun Co (8th) and the 23d Machine Gun Co of the 6th Machine Gun Bn, was to support the French division by seizing the remaining high ground of Hill 142. The 3d Bn, 5th Marines, then commanded by Maj B. S. Berry, was to advance on the right of the 1st Bn, keeping his left flank in contact with them. The attack was launched at 4 o'clock that morning. The 1st Bn, attacking on a front of approximately 800 yards, advanced about 1,000 yards to the north. Neither the French on their left nor the 3d Bn on their right were able to keep up with the 1st Bn. The attack, which struck between two German divisions, took them by such complete surprise that they were

compelled to shift their reserves to halt the advance of the Marines. The attack cost the 5th Marines about 400 men killed and wounded. Twenty prisoners were taken.

And now Belleau Wood. As a wood goes, it was not a large one; the long axis, which ran roughly north and south, was scarcely over a mile long and it was only slightly over a half a mile wide at its broadest point. About half way up its long axis it narrowed to a decided neck. It was typical of those maintained by the efficient French Forestry Department. The trees were not large, averaging about 6 inches in diameter, but they grew tall, straight and dense. Except for the fringes of the wood, it was comparatively clear of underbrush. The earth was thickly strewn with huge boulders and the southern end was cut by a deep ravine.

The dent hammered in the German lines by the 1st Bn, 5th, left the enemy holding a pronounced salient at Lucy-le Bocage and at noon on 6 June, BrigGen Harbord ordered the immediate capture of Belleau Wood to straighten the lines. The general plan was to have the 3d Bn, 5th Marines attack from the positions it was then holding almost due east across the short axis of the wood and seize all but its southern edge. Simultaneously, the 3d Bn, 6th Marines, commanded by Maj B. W. Sibley, was to attack to the north and eastward and seize the southern portion of the woods and the town of Bouresches. The 1st Bn, 5th Marines, on the left of the Brigade front and the 2d Bn, 6th Marines, on the right, were ordered to advance their flanks to conform to the movements of the attacking battalions. At the conclusion of the attack, the Brigade expected to occupy a line skirting the northeast edge of Belleau Wood and the town of Bouresches.

The attack, supported by comparatively ineffective artillery fire, was launched at 5 o'clock in the afternoon; three and a half hours remained before darkness. The 3d Bn, 5th Marines, attacking eastward across a wheatfield approximately 400 yards in width, was subjected to murderous machine gun fire but the battalion drove on without faltering. So severe were the losses, however, that the few determined men

who managed to reach the western edge of the woods were withdrawn under the cover of darkness. Maj Berry, himself, was seriously wounded, suffering a shattered arm which later cost him his hand.

Meanwhile, the 3d Bn, 6th Marines, managed to move from its positions across about 200 yards of open ground and seize the southern edge of the woods. The 3d Bn attacked in 4 successive skirmish lines, the men placed about 5 yards apart, and the waves 15 to 20 yards behind each other. One by one they crossed the open ground and entered the fastness of the forest.

The original plan was that a company from the 3d Bn, 6th, was to capture Bouresches, but a company from Maj Holcomb's battalion, through a misunderstanding, reached the heavily defended town first. In the vicious battle which ensued, the company, with its commander dead and only 20 effectives remaining, drove an estimated 300 to 400 Germans from the stoutly defended town and held it against all efforts to expel them with artillery fire, high explosive and gas.

The late afternoon attack cost the Marines heavily. It left 31 officers and 1,056 men killed, wounded or missing—more casualties than the Corps had suffered in all its previous history. Among the casualties was Col Catlin who was shot through the lungs while standing on a parapet directing the attack of his battalions. Upon his evacuation from the front, he was succeeded by LtCol Harry Lee.

On 7 June, the Marines prepared to resume the attack. During the night of the 7th and early morning of the 8th, the 2d Div artillery shelled the woods and at 0400 the 3d Bn, 6th, again attacked in an effort to drive to the north through the machine gun infested forest. Failing to advance, the battalion withdrew to a ravine south of Belleau Wood to permit the artillery to shell the German positions.

In the early morning of 9 June, preceded by a heavy artillery bombardment, the 1st Bn, 6th, launched an attack on the southern portion of the woods. The battalion, supported for the first time by an adequate artillery preparation, made encouraging progress and the battalion commander optimistically reported



that he had reached his objective, the narrow neck of the woods. Actually, as events were later to prove, he had only reached the line that Maj Sibley had reached on the opening day of the attack.

The next attack by the Marines was made in the early morning hours of 11 June. Preceded by a light artillery preparation (as a result of the erroneous impression of the progress made on the 9th) the 2d Bn, 5th, commanded by Maj Wise, launched a determined attack to complete the capture of the woods. The battalion advanced to the north, its left guiding on a road which ran just west of Belleau Wood. It was anticipated that the battalion would join the 1st Bn, 6th, at the narrow neck of the woods. Unfortunately, the 2d Bn was not aware that the 1st Bn, 6th, had not reached the neck of the woods as they had been reported on the 9th. In an effort to establish contact with the 1st Bn, the 2d Bn, 5th, moved steadily to the right as it advanced until finally its left flank had moved over to where its right boundary was intended to be. At last contact was made and the battalions drove on to the narrow neck before being stopped by heavy losses. The following morning the Germans counterattacked in a vain but determined effort to retake the southern half of the woods.

At 1700 on 12 June, the 2d Bn, 5th, reinforced by 2 companies of engineers and 150 replacements, resumed the attack. Again the artillery preparation was inadequate, but the 2d Bn drove on with indomitable courage, fighting their way forward independently or in small groups

and finally broke through the Germans' main line of resistance. At 2040 they reached the northern edge of the woods and stopped to reorganize. Only the boulder-strewn northern corner of the woods was left in the hands of the enemy, defended by what remained of the German 461st Inf Regt. During the day a number of prisoners were taken, among them a wounded officer who reported that the Germans intended to counterattack early the next morning to regain the woods.

On 13 June the expected German counterattack materialized. Preceded by a massive artillery bombardment, the German infantry attacked the entire eastern edge of the wood and the town of Bouresches. The counterattack, despite its fury, failed, and for the remainder of the day the Marines were subjected to artillery harassment, both high explosive and mustard gas. During the day over 450 gas casualties were suffered by the 1st Bn, 6th.

For the next 2 days the Germans continued to launch determined attacks against the eastern edge of the wood and to reinforce the corner of the wood which they still held. The enemy, however, was too badly mauled to repeat a counterattack on the scale of the one launched on 13 June and the Marines, though tired and depleted, held.

During the period, 15 June to 22 June, the 7th Infantry of the American 3d Div, which was in army reserve, relieved the weary 4th Brig. The brigade sector remained under the control of Col W. C. Neville throughout the period, however. Meanwhile the enemy, too, was busy licking his wounds and replacing

the remnants of the shattered German regiments with the 87th Inf Regt.

The brief respite from the lines gave the brigade an opportunity to bury its dead and reorganize, partially refilling its dwindling ranks with 2,800 replacements.

On the night of 21-22 June, the 3d Bn, 5th, re-entered the lines and took over the center battalion area in the Belleau Wood. The next night, 3d Bn, 6th, took over the right battalion area and on the succeeding night, the 2d Bn, 5th, took over the front lines on the left of the sector.

Once again plans were made to drive the Germans from the remainder of the woods, and once again the attack was launched without an adequate artillery preparation. Preceded by ineffective fire from trench mortars and rifle grenades, and employing the spectacular tactics used by the 2d Bn, 5th, on 12 June, the 3d Bn, 5th, jumped off at 1900 on 23 June. But the Germans, determined to hold, had arranged their machine gun positions to be mutually supporting and as their positions were overrun, the crews usually managed to escape with a part of the guns' mechanism. Immediately another gun would take the position under fire and mow down its captors. Bayonets were not enough. The attack stopped and for the time being, the Germans held.

On 25 June at 1700, after division artillery bombarded the German positions for 14 straight hours, the 3d Bn, 5th, attacked behind a rolling barrage and by 2130 they had secured the wood, only a few stubborn positions remaining on its extreme perimeter. They fell the next morning and Belleau Wood became a matter of history.

On the night of 4 July 1918 the 52d Army Brig relieved the 4th Mar Brig and, along with the remainder of the 2d Div it was placed in corps reserve. The succeeding months once again saw the Marines distinguish themselves in the great offensive which brought the war to its successful conclusion.

Perhaps no action in World War I so clearly exemplified the spirit of the Marine. Except for army artillery support and the brief period during which army troops occupied

the lines, Belleau Wood was a Marine show from start to finish. Fighting for the first time as Americans led by Americans, the Marines stopped the flower of the German army and in the savage weeks that followed they drove them from their forest citadel. With grenades, bayonets and rifles, they took on the best the Crown Prince could offer and beat them. They restored dignity to that forgotten weapon, the rifle. And when the battle was done, the Germans no longer scoffed at the ability of the American fighting man. The enemy paid the Marines their highest tribute—their battle reports called them the shock troops of America. The Marines asked no quarter and gave none—from tree to tree, boulder to boulder, gun to gun, they fought, impelled only by their magnificent courage and their indomitable spirit. When their leaders fell, they fought on alone, driven by that imponderable something called "esprit de corps."

During this momentous battle,

the 4th Mar Brig suffered nearly 5,000 casualties and inflicted over 3,000 on the German front line troops. The 4th Brig had written its history in German blood—and its own.

On 30 June 1918, in honor of the great battle which had been won, the following order was published by a grateful France:

With Army Staff

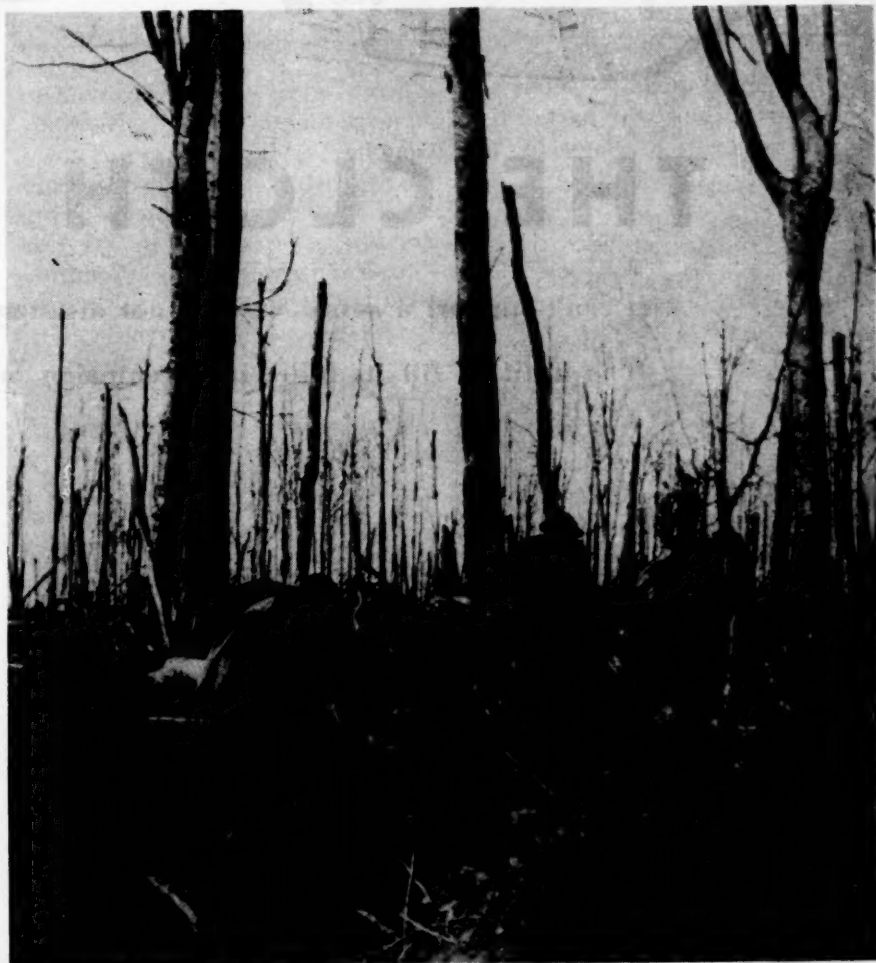
6930/2

Army HQ, June 30th, 1918
Order

In view of the brilliant conduct of the 4th Brigade of the 2nd US Division, which in a spirited fight took Bouresches and the important strong point of Belleau Wood, stubbornly defended by a large enemy force, the General commanding the Sixth Army orders that henceforth, in all official papers, the Bois de Belleau shall be named "Bois de la Brigade de Marine."

Division General Degoutte
Commanding Sixth Army

US 3 MC



THE CASE AGAINST



THE CLOTH BELT

It can't support a sword, it does not distinguish its wearer.

It is unfit to fill its billet in a campaign on girth control

WHEN THE RETURNS ARE FINALLY in, the cloth belt may well claim title as the most non-functional, non-ornamental, non-visible bit of uniform which has afflicted Marine officers during the past 179 years.

During an era when the Corps is making forward strides on all fronts—including uniforms—can't we find something a little better than the cloth belt?

What's Wrong with the Cloth Belt

The belt on your blouse should do 3 jobs:

- (1) Suspend equipment and arms.
- (2) Emphasize (or at any rate suggest) a trim waistline.

- (3) Distinguish the officer-status of its wearer.

The cloth belt accomplishes none of the foregoing functions.

Arms and accouterments cannot be hung from the cloth belt. This, indeed, is the main practical reason why the sword is not worn every day as a normal habiliment. And because the cloth belt fails its nominal purpose as an equipment-hanging device, we are condemned to put up with a subsidiary monstrosity, the cloth sword-sling.

By LtCol R. D. Heinl, Jr.

The cloth belt is anything but figure-molding. In fact it slips effortlessly into agreement with the wearer's most relaxed coefficient of form, usually with the belt-buckle twisted well askew.

The cloth belt distinguishes nobody. It can't. From any distance it is invisible, or approximately invisible. While at close range the belt quickly shows itself whenever: it fails *precisely* to match the shade, material and state of wear of the blouse; or as usually happens moments after you put on the belt, the dinky little buckle cants sideways. Replacing a worn-out belt presents the problem of finding a new cloth

belt whose shade and material go well with the remainder of the uniform.

What the Cloth Belt Costs You

By virtue of failure to do the ordinary jobs we ask of a uniform belt, the cloth belt is unsatisfactory enough. Even worse, however, the pesky thing costs Marine officers a great deal of money which most of them can ill spare on a doodad whose sartorial return is minus. And it costs them more money for uniform belts than they had to pay out before the advent of the cloth belt.

According to an established military tailor in Washington, DC, a cloth belt costs \$3.50 over the counter, and a few cents less when thrown in with a complete uniform. In other words, every uniform with which you get a cloth belt (as most people do almost every time) costs you about 3 dollars and some cents more.

Let's investigate the financial case-history of a typical Marine officer (the author) who has been buying cloth belts at intervals since 1943 when they first became required items of uniform.

Here is a roster of cloth belts purchased by your author — and what happened to each during one decade of service (see chart right).

There it is, readers — a \$47.00 tab



Marine Corps Gazette • June 1955

Belt Number	Type	Occasion for purchase
1.	Green elastique	All four purchased as initial outfit for uniforms then in service
2.	Blue elastique	
3.	*Green whipcord	
4.	Khaki gabardine	
5.	Green elastique	For new greens, 1946
6.	Khaki tropical worsted	For new khaki, 1946
7.	Green elastique	Replaced belt #1, worn threadbare near buckle
8.	†Blue elastique	1948 Replaced blue belt (#2) lost by cleaner
9.	Green elastique	For new greens, 1950
10.	Green tropical worsted	For new khaki, 1951
11.	Blue elastique	For new blues, 1953
12.	Green elastique	For new greens, 1953
13.	‡Green elastique	Replaced belt #5, worn threadbare

*This belt subsequently discarded, though serviceable when uniform wore out.

†Never did match original uniform exactly.

‡Also a bad match like #8.

THIRTEEN CLOTH BELTS @ \$3.50 \$45.50

ONE CLOTH SWORD-SLING @ \$1.50 \$ 1.50

TOTAL 10-YEAR EXPENDITURE ON CLOTH BELTS — \$47.00

for the first decade in cloth belts.

Moreover, as can be said of practically every regular officer (and most reservists) during that decade, the author spent more than 3 of those 10 years in field service, wearing nothing but dungarees or cold-weather gear while the cloth belts gathered larvae at home.

What Might Be Done About It

If you hadn't done so already, you may conclude from the foregoing that the cloth belt is scarcely an ideal solution to the Marine officer's belt requirement.

What can be done about it (assuming that the cloth belt were abolished) presents a choice between having no belt at all (which is virtually the present position, except that today, it would appear, one pays \$47.00 every 10 years for *almost* no belt), or of going back to the Sam Browne.

The Sam Browne belt is by no means a mere trapping. It was invented, as we all know (or should know) by Sir Sam Browne, VC, one of England's most redoubtable campaigners in 19th Century India. In

the course of many battles, Sir Sam had lost an arm, and the one-shoulder diagonal of the special belt





which he forthwith designed helped him to manage and support his sword. If you do not believe all this, you may see the original Sam Browne belt — Sam Browne number 1, itself — in the museum at the Royal Military Academy, Sandhurst (England's West Point), where the venerable belt is proudly encased near its originator's portrait.

At any rate, the Sam Browne caught on for officers with two arms as well as those with only one. And well it might.

Simply because:

- (1) It was an efficient, well supported equipment-hanging device.
- (2) It served as an admirable long-distance recognition device for officers.
- (3) One belt lasted one wearer one career.

During World War I these advantages became clearly apparent to Marines who served in France (and to the AEF as well). As a result the Sam Browne was adopted after the first World War and remained part of the Marine Corps scene until the opening days of World War II, when leather became scarce and people, seemingly, had less chance to polish it anyway. At about the same time, you may recall, appeals went out for officers to turn in their Mameluke swords to the local scrap drive. This aspect of the wartime scrap-metal effort seems to have fallen well below quota insofar as Marine donations were concerned.

But the Sam Browne belt did become a war casualty.

Until 1944, you could wear it as an optional item, away from troops. Then the ax fell, and the Sam Browne was stricken from the *Uniform Regulations*. Seemingly the old belt had passed on to Valhalla beside the field hat, the gunnery sergeant, the sword and pre-1939 close-order drill.



Today the old drill is back again. So is the sword, whose wear is encouraged on all appropriate occasions by Marine Corps Headquarters. This is surely as it should be.

But anyone who has to wriggle in and out of the cloth sword-sling (a device which boasts all the dash, character and comfort of a truss or a concealed money-belt) may well ask — why not bring back the Sam Browne belt?

Yes, bring back the Sam Browne. Bring it back to save money. Bring it back to facilitate wearing the sword. Bring it back to distinguish officers from enlisted men. Bring it back to distinguish Marine officers from officers of other services.

That's all very well, someone will be quick to say, the Sam Browne may be all right for outdoors, for duty with the troops, for drill, for ceremonies, for appearance in public. But what about the man whose parade-ground, perforce, is his desk, whose barrack square is a cubicle in Arlington Annex or 100 Harrison Street? In other words, how would the Sam Browne do for indoors?

The answer is — not too well.

The Sam Browne belt isn't indoors equipment any more than the sword. But the Marine Corps isn't primarily designed for indoors either.

The only places where indoors uniform problems bulk large are our few large headquarters and schools. None of these ordinarily require officers to wear blouses indoors anyway. For those who must wear blouses in the office, at mess, instructing and such other semi-formal occasions, it would be simple enough to take off the Sam Browne and hang it up beside your cap. That, incidentally, is the British procedure. Thus, if the Sam Browne were to be restored, the British rule would be a good guide: wear your belt out of doors and on the few occasions inside when an officer should remain covered (such as relief of OD, etc.). It could be as simple as that.

For anybody who wants to wear out his remaining cloth belts, make them optional, for indoors only. And the sooner those cloth belts get worn out — and then thrown out — the better it will be for the Marine Corps.

US MC

in brief

During the maneuvers held by the 3d Bn, 6th Marines (Reinf) at Izmir, Turkey, the aggressor troops were furnished by the Turkish Army. In addition to supplying the aggressor forces the Turks had a troop of cavalry operating with 3/6 from 1600 D-day until 1200 D plus 2. The terrain was ideal for cavalry and the outstanding professional performance of the Turkish cavalry ranks them among the top horsemen of the world. In addition to the standard cavalry weapons, they carry a German-made LMG slung across the shoulders, American made 3.5 rocket launchers in the same manner and American 60mm mortars carried complete across the saddle horn as part of the normal field gear.

A new training program for prospective Marine aviators will be inaugurated this fall at the Marine Corps Schools, Quantico, Va. It will be called the Aviation Officer Candidate Course and it will result in earlier commissions as second lieutenants for men who desire to become Marine pilots. The AOCC will be offered to college graduates who will attend a 10-week basic indoctrination course designed to give them basic Marine Corps training with emphasis on the infantry aspects. Successful graduates will be commissioned and ordered to flight training.

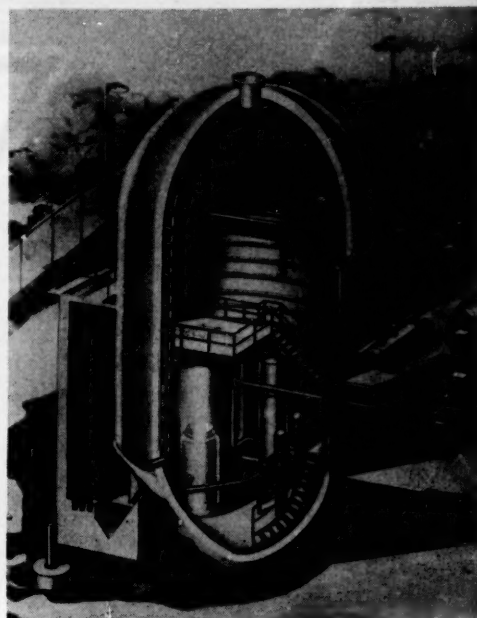
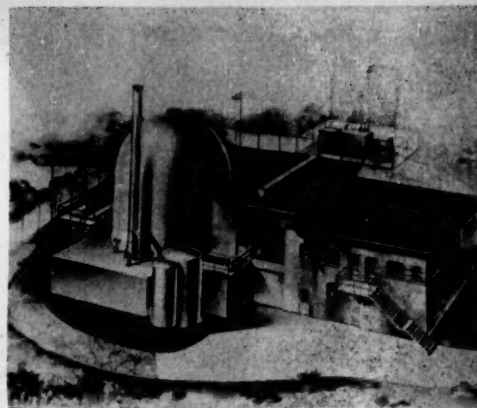
Antagonists from the 4th Marines in Hawaii use "pugil sticks" (below) in practicing the Seidler method of bayonet fighting. Based on standard movements used in boxing the new system is being tested for practicability by several different outfits in the Marine Corps. The method was introduced through an article titled *Close for the Kill* in the April 1954 issue of the GAZETTE

Members of Britain's Royal Naval Scientific Service have come up with a new way to distill fresh water from sea water at a savings of 1½ million dollars a year. This is done by introducing a new chemical compound into existing evaporators. The new compound prevents scaling and the formation of foam. It has been found to prolong the operating life of an evaporator 5 times and increase its efficiency by about 30 per cent. With the new compound fresh water can be made on board ship at a cost of around \$1.68 a ton, as against \$2.52 a ton before the present method of treatment.

Troops taking part in atomic maneuvers are carrying a gadget about 2 inches square which may some day save their lives. This new item of issue is a dosimeter film badge containing 2 types of X-ray film. In event of atomic war it is wrapped in transparent plastic and would be the man's personal record of exposure to radiation. Unlike most items of issue to the Armed Forces the film badge doesn't have a prescribed place to be worn or carried. It is just as effective when carried in a pocket or when attached to the outside of the uniform. Gamma rays can penetrate most anything except a wall of lead.

The Navy has started construction of 10 propulsion units and 2 spare gas turbine engines for installation in 10 LCVPs. Installation of these engines represents the first attempt by the Navy to use gas turbines as main propulsion units in landing craft on an operating basis. This trend was forecast in *More Power With Gas Turbines* published in the Sept '54 GAZETTE.

The sword has once again become the badge of duty and symbol of authority for the Officer of the Day. The clank of the Mameluke scabbard is being heard at a number of posts and commands where the sword has become the mark of the man representing the pinnacle of authority. This is as it should be throughout the Corps.



A package power reactor plant designed by the American Locomotive Company (above) will be erected at Ft. Belvoir, Va. and should be in operation in about 3 years. This will be a prototype of the first atom-powered generating plant built so that its components can be transported by air to remote bases in any part of the world. It will probably be the nation's first exportable device for application of atomic energy to peaceful purposes.

A new program for training volunteer reservists and volunteer civilian marksmanship instructors has been developed jointly by the Marine Corps Reserve and the National Rifle Association. The program, launched on an experimental basis several months ago, would provide an opportunity for former Marines not affiliated with organized reserve units to maintain, or increase, their marksmanship proficiency under the coaching of NRA volunteer instructors. Marine Corps Reserve or local NRA club ranges would be used. A pilot unit, using the facilities of the National Capital Rifle and Pistol Club was established in Washington, DC.



We all know how to use check points, so why not make
their use an integral part of our operational planning?

Check

Points

By LtCol H. J. Woessner



MANY OF US HAVE BEEN IN AN outfit which has used "reference points" or "check points;" many of us have known of outfits which have used them, and still others may have no knowledge of them. Whatever our experience with them in the past, it is considered that the advantages which their employment may offer are numerous and beneficial enough to receive wide attention. Furthermore, the better we understand their capabilities and limitations, the more we can derive from their employment.

What are "check points" or "reference points?" If we consider the terms synonymously, the definition of "reference point" which we find in the *Dictionary of US Army Terms* can be accepted for both; namely a "prominent, easily located point in a terrain."

Since it seems that the term "check point" is used more frequently than "reference point," we will so adopt it for our discussion. To carry the definition a bit further, we will define the "check point system" as a system which employs check points for identification of prominent, easily located points on terrain.

This system, if properly employed, offers a number of advantages: a means of identification of terrain features; a basis for common understanding of terrain; a means of pro-

viding flexibility and co-ordination in tactical operations; a reference to locations on the ground and; speed and security in communications.

If we were to examine a map of suitable scale for tactical employment in the Caucasus or Indochina or elsewhere, we would find that for every hill top that was named, "Gora Polkovaya" or "Don Vom Nui," or numbered with an elevation such as Hill 787, there would be many without name or number. As a means of identifying any of these named or unnamed, or numbered or unnumbered hills, therefore, we may circle them by a "goose egg," designate them by number and refer to them as "check point 5" or "6," etc. The important terrain features then have a common denominator, and may become familiar to those using them. In some areas, most of the check points might be hills, but regardless of the locality, any terrain or cultural feature such as a road junction, or building, which is identifiable on a map and on the ground, may be identified and designated as a check point.

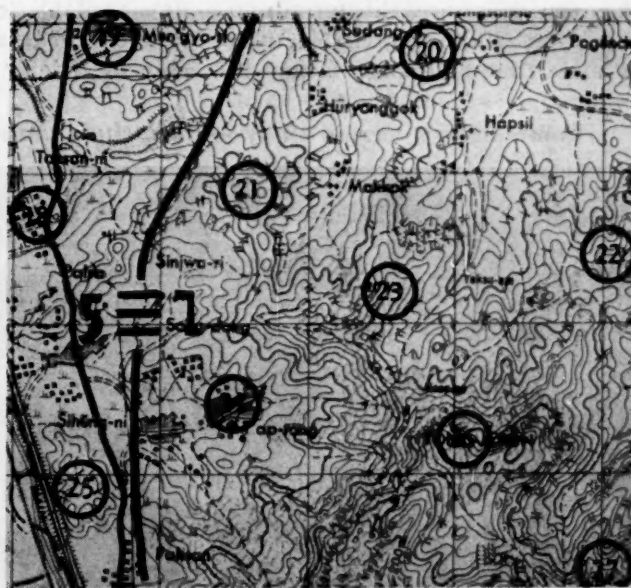
The brief discussion above simply describes the mechanics of identifying by number those terrain features which may or may not have other identification. The important thing, however, is to determine the procedure for selecting terrain features

as check points for tactical use.

Prior to any operation, the commander at each level must study the terrain to determine what points or areas will afford a marked advantage to either combatant. These points or areas are the critical points or critical terrain which he normally must seize in the offense, retain in the defense or delay on, in a retrograde movement; and it is these critical terrain features which are selected and designated as check points.

Suppose we visualize the situation in which an infantry regiment has received a division plan of attack. The regimental commander, with the help of his staff, studies the terrain and the information on the enemy situation and capabilities, to determine his courses of action, and to arrive at a decision on the plan of maneuver and plan of supporting fires. His plan of maneuver, then, is based on how he will utilize the terrain to his advantage, and normally there will be a number of terrain features which he will consider critical. In order to insure that the maximum benefit is derived from his terrain study, and to establish a basis for common understanding and appreciation of the terrain and how it will affect the accomplishment of the regimental mission, he may designate the critical terrain features as check points.

The question may well be asked whether or not the terrain features which are critical to the regiment include all those which are critical



to the subordinate battalions and companies. Normally, they would not be so inclusive. Therefore, in order to preclude the requirement for each battalion to establish an additional set of check points, and so that one set will be standardized within the regiment, the regimental commander's terrain study is extended to include those features which may be critical at the battalion level.

It may occur to you at this time that the regimental commander is taking the initiative away from the battalion commanders, since by selecting terrain features which may be critical to them, he must also be basing his selection on the courses of action open to them. This may be the case, but is not necessarily so. If the regimental commander decides to effect the maximum co-ordination, he could so assign the check points as intermediate and final battalion objectives. Then, however, the courses of action available to the battalions would be extremely limited. However, if he assigns only the final objective to the battalions, although it probably will consist of one or more check points, the battalion commanders have the initiative to select their own intermediate objectives, which may or may not include one or all of the intermediate check points.

We see then that the check point system may be used as a basis for common appreciation of that terrain which the regimental commander considers critical. As experience is gained in operating over various types of terrain against a certain type of enemy resistance, this terrain appreciation will better enable us to estimate time and space factors in-

involved in executing certain missions. By studying the check points or critical terrain features in a battalion zone of action, the regimental commander may estimate the distance over which the battalion attack may be expected to progress in any one day, and thereby assign an objective to the battalion which can be seized in the time available. The same considerations will apply to the assignment of patrol objectives.

In addition to its employment in connection with the appreciation of terrain and related problems of time and space, the system can be applied to effect various degrees of control and co-ordination, and is therefore very flexible. As has been stated above, if the regimental commander desires to co-ordinate the attack of his assault battalions he may do so by assigning specific check points as intermediate objectives for specific battalions. However, there are undoubtedly a number of Marines who would take issue with the idea that there is ever an excuse for the regimental commander to exercise this degree of co-ordination, and thus deprive his subordinate commanders of their initiative. Let us consider some of the factors involved.

It is readily admitted that there are several advantages to be gained in assigning a mission to a unit and allowing it to make the most rapid advance possible, without concern for the situation elsewhere. For instance, the unit advancing rapidly without regard to co-ordination or contact with flank units may seize its objective quickly, perhaps with fewer casualties than otherwise; have more time available to consolidate the objective seized; and thus be better able to defend it against counter-

attack. Having seized its objective quickly, the unit may be able to support other units on the flanks which may be having difficulty in advancing. In addition, its rapid advance may influence the enemy opposing adjacent units to withdraw more quickly. Moreover, it allows the unit which has gained impetus in the attack to take full advantage of destroying the maximum number of enemy troops and equipment, possibly including enemy supporting weapons.

The advantages outlined above are those which would influence some aggressive commanders to disregard co-ordination and contact with adjacent units on the flanks—concerned only with their own flank security and to charge ahead as fast as possible. Very often, perhaps most often, this would insure the greatest degree of success. However, the selection of a course of action should be based on a study of the terrain and the enemy as well as on a consideration of one's own capabilities, and these factors may influence a decision which will require more positive, if not maximum, co-ordination in the advance.

Consider what may happen when a unit advances quickly and leaves a gap on the flank toward the unit or units advancing more slowly. This may have the effect of causing: 1) exposed flanks to be created on at least one flank of two adjacent units (or two open flanks); 2) the over-extension of one of the two adjacent units which attempts to close the gap; 3) loss of depth in either unit which uses its reserves to close the gap; 4) the unit which had advanced rapidly to be caught in an enemy trap subject to isolation and envelopment, and vulnerable to defeat in detail; and 5) by-passing groups of enemy or allowing large-scale infiltration.

The "gap" on the open flank must be considered then, in relation to our study of the terrain. The possibilities of defeat in detail and infiltration must be viewed in relation to the nature of the enemy and his capabilities. If the terrain is mountainous or very difficult, the "gap" of a certain distance may assume much greater proportions in terms of supporting distance than in open terrain, and hence, may be a serious

Commander's terrain study— to include those features . . .





... which may be critical at the battalion level

consideration. If the enemy is adept at tactics of envelopment, encirclement and infiltration, this too must receive due analysis. We may find, therefore, that even aggressive commanders will decide on the course of action which requires a very positive degree of co-ordination of subordinate units. In such a case, it will prove very advantageous to have available the means of insuring the degree of co-ordination required. The check point system offers this means.

Check points may also be used as a means of control and co-ordination by the commander who may want to order one unit to support by fire from one terrain feature, the attack of another unit on another terrain feature or series of features held by the enemy. If, in the course of the attack, the commander wishes to change his objective or plan of maneuver, he may do so by re-orienting the attack to, or through different check points. For instance, an order can be given during the attack to "consolidate at 031600 May on check points 14 and 15 and patrol to check point 16"; or "1/7 from check point 2, support 2/7 attacking from check point 3 to 4 to 5."

Reports of unit locations or situations can likewise be made very briefly as, "on check point 10," or "500 meters west of check point 2."

In the transmission of orders or in reports of unit locations or situations, check points may facilitate rapid and secure voice communications. Orders using check points can be given in a fraction of the time that it would take to use a shackle code for grid or target area designation, and without the error often introduced by use of the shackle. The important thing to re-

member here is that when reporting in enciphered messages to higher or adjacent units which may not have received or retained the locations of all check points, the grid or target area location should also be given, i.e. "on check point 11-CS987987 (or 98981)."

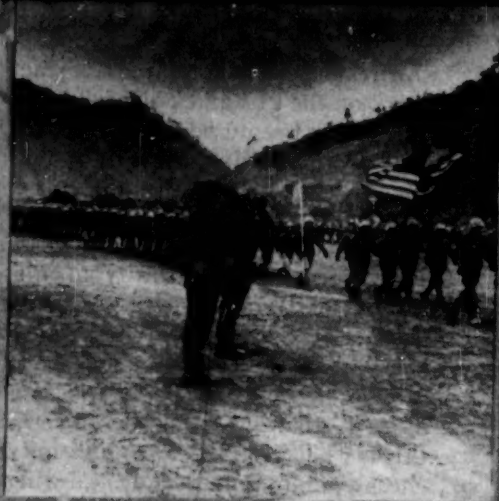
Let us cite an example of how the check point system may be used to give a common appreciation of the terrain within a unit's sector or zone of action; to provide a means of control, co-ordination and flexibility; and to insure rapid voice communications.

On 6 May, your regiment, the 7th Marines, is ordered to consolidate defensive positions and patrol. From 7 to 20 May, the regiment consolidates its positions and orders one or two daily company size combat patrols to various check points in its sector up to about 6,000 meters forward of the MLR. By 20 May, almost every man in the regiment recognizes the check points in the vicinity of the patrolled area as specific hills or other terrain features and vice versa. Every platoon, company and battalion commander can refer to "check point 10," for instance, and visualize it in his mind's eye. The regiment, therefore, has a basis for common understanding and appreciation of the terrain. When the attack through this same zone is ordered to jump off on 21 May, co-ordination is positively and easily effected. Each unit knows exactly where the other is simply by mention of the number of the check point concerned. When the enemy launches their heavy offensive on the night of 22 May, the 7th Marines are ordered to withdraw to refuse the completely exposed 1st Mar Div west flank. The new check points

which have been employed for the attack on the 21st and 22d, and those which have been used during the defense and patrolling, are used again, but this time in the other direction. The result is positive and effective control and co-ordination, and demonstrates the flexibility of the system. After the withdrawal is planned, the following type of message may be put out via conference call on the voice radio. "The frag order is on its way to you. Briefly, this is what it says: 2/7 from vicinity check point 6, cover 1/7 during move from 11 to 12; on arrival 1/7 vicinity check point 12, 2/7 move to vicinity 4 and occupy blocking position to west. 1/7 move from check point 12 to 8; co-ordinate move with 2/7; contact 5th Marines vicinity 9; organize defensive position. 1/1 has been attached and is in blocking position vicinity check point 4. 3/7 move via check point 14 and 9 to contact 1/1; maintain contact vicinity check point 8 with 1/7. Regimental CP moving from vicinity check point 3 to 2." Thus, in a very short time, all units have the same picture of the plan. They can visualize it on the ground. Moreover, the regimental S-2 is able to use the system to outline his estimate of the enemy scheme, and may put it out briefly, as follows: "The enemy is building up vicinity check points 16 and 17; it appears that they plan a deep penetration and envelopment via check points 12 and 8 to strike via check point 4." Everyone has a quick picture of what the S-2 estimates as the enemy capability.

Thus, the system has varied operational application, in defense and patrolling, attack and retrograde. Co-ordination may be effected between units because they appreciate and understand the terrain on the same basis and in common terms. It is possible to talk about plans and orders rapidly and thus save time when time is valuable.

Since the system is flexible, facilitates co-ordination in tactical operations, and rapid transmission of orders, it is a technique which is readily adaptable to mobile, fast moving operations which are now being discussed as future doctrine. It is worth our consideration, in any case, so that we can employ it now in training and in the future when "battle is the payoff." US MC



HEALTH

THE INFANTRY REGIMENT IS NOT dead. It is not an obsolescent administrative echelon suspended midway between the division and the infantry battalion. A combat team built around the infantry regiment is an efficient battle unit readily adapted to the requirements for a well-led, self-sufficient, hard-hitting force in modern amphibious warfare.

Not since 1940 has the organization of ground forces been the subject of so much study and debate. The critics of the regiment as an efficient unit for an atomic-age war are legion. Yet it seems they make two dubious assumptions fundamental to their rejection of a regimental combat unit.

First of all they assume the totality of nuclear weapons. It would be foolhardy to minimize either the tactical or physical effects of the atom bomb. A "nominal" (Hiroshima variety) bomb will cause casualties over an area of 5 square miles. Admiral Radford said early in 1954: "Today, atomic weapons have virtually achieved conventional status within our Armed Forces." The tactical application of these weapons will bring revolutionary changes.

But atom bombs do not negate the principles of war; they do not remove the need for shock and the firepower of conventional weapons nor do they supplant mass and the concentration of power at decisive moments. Atom bombs are not all-destroying and their effects may be avoided or mitigated by proper training as well as by dispersion and mobility.

The public libraries of any American city contain enough unclassified information about nuclear weapons to substantiate these statements. Given our theoretical "nominal" atomic air burst, troops properly dug in as close as 700 yards to ground zero will suffer no immedi-

By Marius L. Bressoud, Jr

ate disabling effects. After the burst these same troops can approach ground zero as rapidly as possible without danger from radiation. The Marine Corps' own 3d Provisional Atomic Exercise Brigade demonstrated in 1955 that foot troops can move directly after the blast. During the same test, the feasibility of having helicopters airborne at shot time was demonstrated. Numbers of other tests have shown materiel above ground to be relatively undamaged and very often immediately serviceable directly after an air burst. It should be pointed out, however, that the amount of damage to equipment is dependent upon the following factors: type of equipment, yield of the weapon, height of burst and the position of the equipment.

Moreover, terrain which affords a certain amount of natural cover will reduce the bomb's effect and man-made protective measures such as smoke screens will reduce injuries from the bomb's flash. The nuclear weapon's destructive power, however awesome, is less than total.

Secondly, these critics assume that the atom bomb will be the only major difference between the last war and the next one. Geographical and strategical considerations peculiar to the conflict with Communism and to the Eurasian land mass should influence the selection of efficient combat units fully as much as nuclear weapons. World War III, if it comes, will not be World War II plus nuclear weapons.

This is particularly true of amphibious operations by the Marine Corps, which in World War II were generally assaults on heavily fortified but isolated islands, which then became bases for further air and sea operations. But the Communist empire is continental, not oceanic. No

chains of islands mark their claims to areas of the world's oceans.

Yet, in the words of Admiral Carney, Chief of Naval Operations: "In the atomic age the need for control of the seas is more imperative than ever." We must transport more than 50 rare and critical items from all over the world. We must supply such tonnages of arms, food, equipment, fuel and other material—as well as men—that only the Navy with its superior carrying capacity will be capable of doing the job. Furthermore the Naval Service will undoubtedly have the task of sterilizing the enemy's plane and sub bases.

Certainly the long coastline of continental Communism will permit naval task forces, including amphibious elements, to strike in countless places. Vast numbers of the enemy can be tied down by such a force. Surprise, mobility and initiative will enable this force to gain limited objectives on the Asian continent.

Naval operations of this nature demand as sweeping a re-evaluation of Fleet Marine Force organization and tactics as does the conventionalization of nuclear weapons.

Bearing in mind these two fundamental changes in the conditions of amphibious warfare—nuclear weapons and radically different geographical circumstances—we can enumerate certain characteristics requisite for a modern amphibious force.

- (a) Self-contained, self-sufficient and self-restorative.
- (b) Mobile.
- (c) Capable of a high degree of shock and firepower.
- (d) Capable of exploiting atomic weapons.
- (e) Air transportable.
- (f) Independent of lines of communication and supply overland or by surface craft.

Examination of the nature of each

TO THE REGIMENT!

The close-knit, self contained regiment has the esprit and capabilities

required to win in the frontless, flankless battles of nuclear war



Self-restorative units, capable of self-defense . . .

of these characteristics and the reasons for their selection will show the relative capability of a regimental combat team to meet their requirements.

(a) *Self-contained, self-sufficient and self-restorative.* These must be primary requisites in the frontless, flankless battles that would characterize a war under the conditions listed. We must look for a force that can operate independently, possessed of unity of command and a high caliber of leadership; that has sustaining power and endurance; that has sufficient depth to counterattack and restore its position; to include and protect administrative and combat support elements; and to rest, resupply and reorganize subordinate units within the position, yet out of contact with the enemy.

Whether the regimental combat team is a major part of a larger force or whether it operates independently, it possesses capabilities for self-contained and self-sufficient action not possessed by lower echelons. Unity of command under experienced leadership, backed by capable staff work, is the foundation of these capabilities. Battalion commanders capable of a high degree of leadership are frequently handicapped by amateurish staff work on the part of younger officers, however willing they may be. For some reason this has been true of at least a few battalion intelligence sections. Yet under the threat of atomic weapons, intelligence estimates of the enemy's capabilities will assume monumental importance. Dispersion, time and method of movement and many other factors will be determined on the basis of intelligence estimates. Units operating independently or semi-independently in the field cannot expect higher echelons to fur-

nish and evaluate all of the necessary information.

Control and initiative can be more readily exercised by a combat team commander on the position than by the commander of several individual units whose overall responsibilities require his presence elsewhere. For this same reason cooperation with supporting elements including tactical air is more readily achieved.

The regiment is able both administratively and logistically to support itself in the field. It has the personnel and facilities to maintain its weapons and equipment.

The inclusion and protection of administrative and combat support elements (including supply installations) within the position is essential to a self-contained unit. Although they are within the position, these elements must be out of contact with the enemy. This cannot be accomplished by the infantry battalion; certainly it would require the perpetual commitment of all of its rifle companies even if a fourth one were added to the present organization.

Admittedly the current organization of the infantry regiment permits the inclusion and protection mentioned above in only a limited degree. Its self-restorative power; that is, the ability to rest, re-equip and reorganize within the position; is also limited. World War II experience showed us that the regiment is not capable of a sustained offensive without loss of effectiveness for periods in excess of 5 or 6 days. Surely this is too limited for a truly self-contained unit in atomic-age warfare.

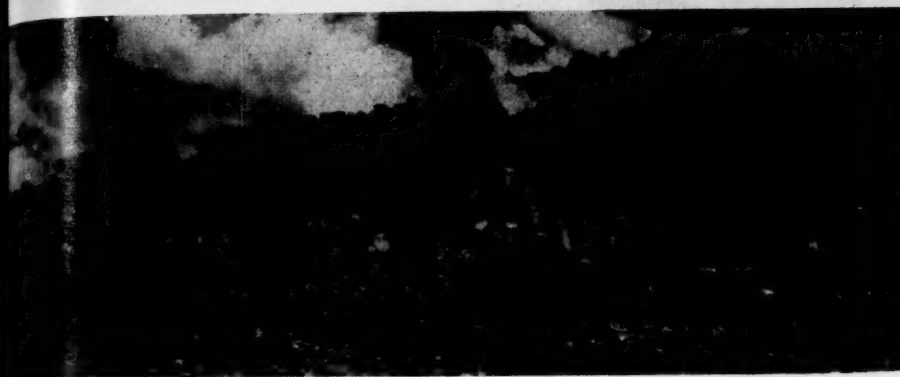
Greater powers of self restoration (as well as the additional depth to fully protect supporting and administrative elements) to counterattack

and restore its own position and to give the regiment sustaining power and endurance can be provided by an additional infantry battalion. Both the 2d and 3d Marine Divisions began an experiment with square regiments in the summer of 1953. The Army's Brig Gen George E. Lynch writing in the *Combat Forces Journal* said that squaring the regiment could be accomplished "without appreciably adding to the tasks of staff, command and support elements." Only those units which serve personnel as individuals would need increase.

If the purposes listed above are to be fully served, the 4 battalions cannot be used on a 3-up, 1-back basis. The necessary depth and the regeneration of subordinate units will not be accomplished by such utilization. Whenever possible, the regimental commander will keep only 2 battalions in contact with the enemy. The changing situation will determine the disposition of the 2 battalions that are not in contact. Perhaps one will act as a local reserve while the other rests. It is likely that the fourth battalion will act as a maneuvering element. On occasion, the 2 uncommitted battalions can form a second defense position as well manned as that held by the front-line battalions through which they can withdraw when the occasion demands.

The result of this addition will be a regimental combat team which, with supporting artillery, tanks, engineers and transports, can form an independent battle group of some 6,000 men. The Army's 1st Armored and 47th Infantry Divisions were reorganized for the atomic age during the fall of 1954 and Gen Ridgway has indicated in the public press that groups of this very size were among those formed and tested. The Marine Corps should be able to relate many of the Army's findings to the uses of amphibious warfare.

(b) *Mobile.* This has been enumerated countless times by military writers as an essential characteristic of an atomic-age ground force. It has significance not only in regard to the prompt exploitation of nuclear weapons and, conversely, to protection from them—but in amphibious warfare, to the opportunities created by the extensive coastlines of the Eurasian land mass.



... and geared for a high degree of shock and firepower

It is important to bear in mind that mobility is relative. General Gavin, Army G-3, in writing for publication consistently refers to "mobility differential." The significant mobility differential is that which our combat unit possesses over an opposing force, not that which a smaller unit of our own possesses over a larger one.

Amphibious forces by their very nature have a mobility denied land based forces. An entire landing force as part of a naval attack force is capable of ranging along an enemy's coast line, providing the attack force has local air superiority. The principal advantage of superior mobility—initiative to determine time and place of action—is held by seaborne amphibious forces as well as the ability to deny the enemy a fixed target for nuclear weapons.

The mobility differential gained at sea must be held ashore. But the solution to the problem of mobility superior to that possessed by the enemy does not lie in pitting a lighter force against him. Mobility is only one of several necessary characteristics and cannot be considered alone. It is a morale factor as well as a technological factor, and training and leadership will develop the former just as carrier production and utilization will develop the latter.

Offsetting to a large extent the disadvantage of greater size, the

6,000-man combat team has certain advantages for mobility denied the battalion and smaller units. It is capable of including and protecting its own motor transport and armor. It can provide landing strips for some medium cargo planes as well as helicopters and light aircraft. Its radius of action, an essential element of true mobility, far exceeds that of smaller units.

Like the regiment, the division has these last advantages. Yet in its present 20,000-man form it is more than 3 times as large as the 4-battalion regimental combat team. Vulnerable as a single battle group, the division will play an undiminished role in the direction, tactical control, logistical and administrative support of three RCTs in the field dispersed beyond the point of mutual support.

(c) *Capable of a high degree of shock and firepower.* Like mobility, this is a relative characteristic and like mobility it is significant only in relation to the shock and firepower of which the enemy is capable. Concentration at moments of decision does not necessarily mean the massing of greater numerical strength than that possessed by the enemy. It does mean sufficient firepower to overcome the enemy's fire and sufficient driving power to close and destroy him.

As Col G. C. Reinhardt, USA (Ret), made plain in the March 1954

GAZETTE, the organization of an atomic-age ground unit must be based primarily on its ability to hurt the enemy, not on its ability to nullify his fire. The regimental combat team is outstandingly capable in this respect. It can include within the team every major item of ordnance equipment, except heavy artillery, available to the Marine division.

(d) *Capable of exploiting atomic weapons.* Perhaps such an obvious characteristic of an atomic-age combat unit should be listed first. Inability to fill and exploit the vacuum created in the enemy's defenses by the explosion of a nuclear weapon shows a basic misunderstanding of the weapon's tactical use. It is certain that delay in the exploitation of atomic weapons will give the enemy time to re-enter the area, reorganize and put to use the undamaged weapons that will surely remain. A unit incapable of such exploitation has no place alone on the modern battlefield.

The radius of the casualty-producing effect of a nominal atom bomb requires exploitation by units larger than the infantry battalion. Only the regiment can move into and rapidly and fully exploit the vacuum produced by weapons of Hiroshima-grade capabilities. Three, or even four, rifle companies cannot accomplish this over a 5-square-mile area when proper tactics require a strong reserve and adequate protection for logistical installations and combat support units.

Moreover, the RCT can force the enemy to concentrate in the field thus providing our nuclear weapons with the opportunity to stop him. Smaller units cannot effectively do this job. Larger units can—and will—when the enemy situation requires the employment of a number of regimental combat teams of the order mentioned.

(e) *Air-transportable.* The threat of enemy atom bomb attack on a Navy task force and the relative ease

3d Prov Mar Atom Ex Brig—an experiment in exploiting the vacuum



with which ships of a fleet can be dispersed without loss of control result in monumental problems in the ship-to-shore phase of amphibious operations. Estimates of the off-shore distance of a transport area range from 15 to more than 30 miles. Moreover, individual transports or carriers will be located so far apart that elements of the landing force will be moving shoreward from entirely different directions. The restricted beachhead would be difficult to get to and impossible to hold without rapid movement inshore.

Over four years ago Col Samuel B. Griffith, USMC, estimated that landing craft would have to be capable of speeds of 30 to 40 knots under such conditions. Certainly the conditions have not improved after four more years of advance in nuclear weapons. Even the very latest tracked amphibians cannot begin to solve the staggering time and space problems involved.

Some time ago in the *US Naval Institute Proceedings*, Col A. J. Stuart, USMC, correctly stated that where helicopter-delivered troops are an adjunct of the landing, success depends on a rapid link-up with the sea-tail or non-airborne component. Obviously, this is because they are not capable of sustained independent action, lacking sufficient depth and the necessary support elements, and because only the sea-tail is capable of fully exploiting their initial success.

The solution, both to Col Stuart's objection and to the problem of rapid ship-to-shore movement under the threat of atomic weapons, is a fully air-transportable combat unit which is capable of passing over beach defenses and landing infantry, combat support units and logistical and administrative elements deep inshore.

We must make clear the fundamental change in the concept of ship-to-shore movement which this involves. Here is no mere projection of assault troops inshore. If the unit is to be truly self-sufficient it must be air-transported with all of its organic and attached weapons and equipment. It must be capable of sustained action ashore without surface resupply for periods up to 10 days. Only under such a concept can we deny the enemy the certainty that we must send equipment and



The RCT can be made fully air-transportable

supplies essential to the assault, by surface craft or vehicles, across the water line. And only under such a concept can we avoid the dangerous period in which equipment and supplies clog a restricted beachhead.

It is possible, however, to visualize a major amphibious operation in which numbers of air-transported regimental combat teams (operating under divisional authority which may remain afloat) establish battle positions behind or within the area defended by the enemy. Exploiting their advantage, consolidating their positions and cleaning out resistance, they will make possible an extremely wide, enemy-free beachhead onto which dispersed landing craft can discharge the vast quantities of equipment and supplies essential to prolonged operations ashore.

The regimental combat team can be made fully air-transportable even though technical problems in designing and providing the necessary aircraft are formidable. Yet the problems are just as formidable for a proportionately larger number of smaller units.

A start has been made in providing air-carriers for troops, equipment and supplies. The Marine Corps' Sikorsky transport helicopter goes far toward solving the problem of delivering assault forces. The Air Force has a YH-16 helicopter which carries 40 men and one of their medium transports, the C-123, is specifically designed for landing troops, vehicles and equipment on unprepared strips in forward areas. The Navy's new seaplane, the RBY-2, is designed for lifting both armor and personnel and delivering them to the beach. The inshore delivery of armor, vehicles and equipment does present a serious problem to which the only practical solution will be the re-design of both carriers and

vehicles for use together.

In the last analysis no unit, whatever its size, is inherently air-transportable. Air transportability is a requirement dictated by both our own and enemy atomic capabilities. It is the answer to the vulnerability of the ship-to-shore and restricted beachhead phases of amphibious warfare and to the demand for rapid exploitation of our own nuclear weapons.

(f) *Independent of lines of communication and supply overland or by surface craft.* The very nature of an air-transportable unit and the conditions of its operation in an atomic age against limited objectives on a continental coastline require that it be supplied by air from the attack force at sea. Supply and communication by air are far from new on the military scene. Major General Wingate, British Special Force commander in Burma during WWII, had his divisional force supplied entirely by air for periods up to 3 months while operating 2-300 miles in rear of the Japanese front. The aerial supply of the 1st MarDiv in Korea during its advance away from the reservoir area is a more immediate case in point.

Yet, efficient supply by air necessarily means supply that is landed. Air drops must continue to be regarded as an emergency measure. The 400 tons of ammunition required by a division for each active combat day includes over 300 tons of artillery ammunition. In Korea, the 1st MarDiv found only 25 per cent of air-dropped artillery ammunition received to be usable. Helicopters and medium cargo planes such as the previously mentioned C-123 can provide the necessary efficient delivery, but they must be provided with landing areas within the unit's position, yet out of contact

with the enemy. Supply by air can be simplified by the reduction of the number of different types of weapons and equipment.

In the atomic-age concept of offensive and defensive areas, rather than lines, units must resupply within the position if they are to continue holding it. Aerial resupply from a mobile task force at sea is a sound and practical principle, enhanced by the approaching ability of the Navy's ships (through nuclear power) to utilize the hull space now given over to fuel storage for additional supplies for the landing force. Illustrative of the Navy's carrying capacity even with conventionally driven ships were the 72 million tons of arms, food and equipment and the 3 million tons of aviation fuel, in addition to planes and personnel, delivered during the Korean war.

Once established, the very size of the battle position of the RCT facilitates air-lifting of troops, equipment and supplies. A regimental combat team of the 4-infantry-battalion organization described, would be able to maintain a position of some 4,000 yards in depth. It would therefore be capable of receiving landed air supplies and, through its superior logistical facilities, of delivering them to subordinate units. No smaller unit can provide the landing and storage areas necessary for continuing supply by air.

The gloomy prophets who foresaw the end of all amphibious warfare in the years immediately following World War II ignored some very basic facts. In discussing the effects of the atom bomb on ground force tactics, officers of the United States Army have recently made some interesting points. One is that the principle of proceeding through a succession of intermediate objectives is no longer sound. The direct assault will mark the ground battles of an atomic age war. Another is that forward assembly areas cannot be considered because of their extreme vulnerability. A third is that movement to points of attack must be made at the last possible moment by the fastest possible means. These statements come close to being a classic definition of an amphibious assault. Should we be forced to participate in a third world war, the character of amphibious warfare will assure it an essential role, one in

which the best possible use should be made of its threat to Communism's extensive coastlines.

The things that pose problems in analyzing amphibious warfare under the conditions that already prevail are not the principles, which retain their validity, but the technical means to cope with radically different time and space factors. It is precisely in the field of overcoming technical obstacles that the United States has shown its strength. Never was this more clearly demonstrated than during World War II. Technical problems must again be solved and when they are, the regimental combat team will have the means to play its proper role.

In considering the expressed objections to an atomic-age amphibious unit of regimental strength we find that most, if not all, are based on the vulnerability of a group of such size to destruction by nuclear weapons. The fact is that a unit of any size may be a profitable target if it is in a position to exercise decisive influence on an action of importance. Certainly an infantry battalion, in local reserve or astride critical terrain and so disposed that a nuclear weapon could destroy or incapacitate it, might well be a primary target.

No one would deny that a 6,000-man RCT could be frequently considered a target for the enemy's atom bombs. But we face a situation in which factors of enemy nuclear weapon capabilities and peculiar geographical circumstances must both be considered. We must weigh a unit's mobility against its firepower, its ease of control against its capability for independent operation and its vulnerability to nuclear weapons against its ability to exploit our own nuclear weapons. No single unit can meet all of the desired characteristics fully, for they are often contradictory or even mutually exclusive. We must find the best possible compromise and then through superior technical ability provide it with the means to minimize its inherent disadvantages. A regimental combat team based on a 4-infantry-battalion organization and provided with the air and surface carriers to give it a mobility advantage, through technical means, will prove to be the most efficient amphibious force.

Superior intelligence work and constant evaluation of the enemy's atomic weapon capabilities will dictate the dispersion, camouflage and cover (both natural and artificial) with which the regimental commander will protect his combat team. Life will vary drastically depending on the enemy situation.

In the defense, battalions will be dispersed out of physical contact with each other. Concentration will be demanded at moments of decision and during actual contact with the enemy. During movement, extreme dispersion will be undesirable because of the need for mobility. But during movement, danger from atomic attack will be correspondingly reduced. Movements in column will permit the commander to expose the smallest possible part of his force to a single atom bomb.

A warning system provided by air forces, other ground units in the field and by the fleet at sea is essential. Warnings of even the shortest duration will reduce the casualties from atomic attack. Warnings of 1 or 2 hours' duration will permit considerable protection and possibly movement out of the target area.

Although large enough to fulfill its role in modern war, the regiment is a group small enough for loyalties and traditions to be formed. The past history of the regiments of the United States Marine Corps is ample proof of this fact. Increased capability for independent action will develop regiments more closely knit, more loyal, than ever before.

There is an old toast that in recent years has been virtually restricted to parade ground oratory. The Marine Corps would do well to revive it and encourage the spirit it represents: pride in a regiment's past, confidence in its future.

"Gentlemen: Health to the Regiment!"
US MC



KUBLAI KHAN'S BEACHHEAD

Some of the amphibious problems that vexed the Khan

700 years ago are still major problems today

By Captain Owen J. Cone

✻ KOREA WAS RAVAGED BY WAR. The battles against the Chinese empire which raged over the length of the peninsula brought the people the worst disasters they had experienced in their entire history. Finally the starved and suffering Koreans were again forced to surrender their country which was absorbed into the vast Asiatic Mongol empire that stretched from Eastern Europe to the China coast.

Then a fleet of several hundred ships manned by 8,000 sailors and lifting a force of possibly 40,000 troops appeared off the coast of Japan's southern island of Kyushu. The Japanese, who knew the disasters of the Koreans, acted quickly. Swordsmen were hastily mustered and rushed to meet the landing forces.

The enemy troops came ashore carrying powerful Mongol crossbows. Each bowman first fired arrows with light points, and then as he came closer he fired arrows with broad metal heads that cut strings on the lighter Japanese bows and cut large open wounds in the men who held them. Finally in hand to hand combat the Mongols fiercely swung their swords and wielded lances.

The Japanese swordsmen met the attack bravely, and although their leaders had never commanded in a large battle or even seen a major action fought, they offered stubborn resistance.

This invasion was Kublai Khan's first attempt to conquer Japan in the 13th Century, and was followed in a few years by another effort with a landing force more than 3 times as large. These were the first large scale amphibious landings in the Pacific area and, even by WWII standards, were sizeable operations.

Although 700 years have brought changes in weapons and ships, some of the major problems which Kublai

faced in launching these invasions are still major problems to be faced by any commander attempting to invade Japan from the mainland of Asia.

Consider the following points, for example:

1.) The decision to land on Kyushu, the part of Japan closest to the continent, rather than farther east on Honshu where the capital was located. One historian, VAdm G. A. Ballard, says Kublai's choice of landing beaches was justified on strategic grounds "in so far as the whole adventure was justifiable on any sound principles of war at all."

2.) The storms which strike this region. Both of Kublai's fleets were struck by typhoons during the return trip to the mainland of Asia. These storms could still cause havoc with an invasion force.

3.) The use of troops which, although experienced in land warfare, are in an amphibious operation for the first time. The Mongols had conquered all Asia from the Dneiper to the China Seas with only 250,000 men. But they failed to crack the beach defenses in Japan with 150,000 men fighting 7 weeks.

4.) The success of the Japanese in defending their country. The Mongols were surprised by the determination of the defenders and probably lost as many men in 8 hours during their first day ashore in the first invasion as they lost during any day in all their wars in China.

5.) The logistical problem.

Having noted these points which suggest the reasons for my interest in Kublai's war, let's return to his first attempt.

The invaders were Mongols and Chinese soldiers carried in ships manned by Korean sailors. The force had been dispatched by Kublai Khan, grandson of Genghis Khan, the amazing Mongol who organized

the nomadic horsemen of Siberia into an army that had overrun half the world as he knew it.

These Mongol horsemen, covered with grease as protection against the cold and mounted on shaggy ponies, had during the previous 2 generations proved themselves practically invincible against any force that was mustered against them. And even in Kublai's time, although the armies were diluted with troops of conquered nations and probably softened a little by comparative luxury, they were still the rulers of Asia, still waging wars of conquest.

They were invading Japan, Marco Polo explained, because Kublai had heard of the immense wealth that was in the islands and was determined to get possession of it. The Khan was also interested in putting an end to the Japanese pirates who had been striking at the Korean mainland.

Kublai sent a message to the military governor of Japan at Kamakura: "We by the grace and decree of Heaven, Emperor of Great Mongolia, present a letter to the King of Japan.

"We have pondered over the fact that from ancient time even the princes of small states have striven to cultivate friendly intercourse with those of adjoining territories."

Kublai went on to explain that he had ended the war in Korea, and declared that the people "feeling grateful towards us, have visited our country" and although the relationship is that of "Lord and vassal, its nature is as felicitous as that of parent and child."

Kublai said further that "Koryu is situated on the eastern border of our dominions. Nihon (Japan) is near to it. . . Since the commencement of our reign not a single messenger of peace and friendship has appeared. . .

"We beg that hereafter you, O King, will establish friendly relations with us so that the sages may make the four seas their home."

"Is it reasonable to refuse intercourse with each other? It will lead to war, and who is there who likes such a state of things!

"Think of this, O King!"

This letter was received in Japan by Tokimune, 7th of the Hojo, the military governors of Japan. Tokimune had vigor and determination, the historian Joseph H. Langford says. "He was a bold soldier, a bold huntsman, overflowing with physical courage, and at the same time a scholar." He was not frightened by the threatening letter. He sent back the first envoy and 5 others as well.

It was after the first envoy failed on his mission that Kublai ordered the Korean king to begin building a thousand ships and collecting the troops and supplies which were sent on the first invasion. This force consisted of 25,000 Mongol and Chinese troops, (although the number may have been only 15,000, plus 15,000 or more Korean sailors and auxiliaries.)

Garrisons on the islands of Tsushima between Japan and Korea and on Iki off the coast of Japan were overpowered by the invaders on their way across the straits. The armada entered Hakozaki bay on Kyushu where the city of Fukuoka is now located, and the troops made their landing.

The Mongols carried trebuchets—military engines capable of hurling rockets or pots of combustible material—which added to the advantage gained by their powerful bows.

But the Japanese meeting the invaders on the beaches were probably equal or superior in numbers and were determined defenders of their homeland, offering resistance as tough as the Mongols had encountered. After the first day the Japanese retired behind their defenses. The invaders were tired and fearful of a night attack. They also saw signs of an approaching storm and worried about their fleet.

In the meantime, Tokimune, the military governor who had ignored Kublai's ultimatums, ordered the provincial governors on Kyushu and eastern Honshu to get every land-

holder under arms, offering rewards for those who co-operated and promising death for those who refused. The Japanese already engaged in the battle could probably have held their fortifications until reinforcements arrived, but this was not necessary.

The weary, discouraged Mongols returned to their vessels and put to sea. Then the storm screamed out of the northwest smashing Mongol ships and smothering the noise of splitting wood and cries of drowning Mongol troops. A large part of the fleet survived the storm, but the invaders left 13,000 dead on the beaches and in the water.

Seven years later the invaders were back, this time in much greater numbers. Kublai dispatched 2 armadas. The Southern Armada which sailed



from China is said to have numbered 3,500 ships, but certainly this number included barks and small boats which served the large transports. This fleet carried probably 100,000 troops, mostly Chinese, many of whom had been defending their country against the Mongols a short time earlier. The other fleet of 1,000 ships constructed in Korea and sailing from there, brought an army of 50,000 Mongols and Koreans. The organization and handling of these fleets has been called one of the great feats of nautical history.

The invasion force landed troops in the vicinity of Hakata where they landed before. A battle, lasting about 7 weeks, was bitterly waged on the beaches. Here is a picture of the battle as it has been preserved in the Japanese writings.

Hakozaki harbor is an indentation twice as broad as its depth inland. Extending about three quarters of the distance across the mouth of the harbor is the narrow peninsula

—Shiga spit. It was on this spit that most of the invading force was landed. Japanese defenses had been constructed fringing the harbor from the point where the spit joined the mainland around to the opposite side of the harbor entrance.

All of the major action was fought, apparently, on the land bordering the harbor. The invaders moved off the spit and threw attacks into the Japanese defenses. The Japanese not only successfully defended their main line of fortifications but launched offensive actions both on land and on the water. Attacking Japanese marched onto the spit to slash at the enemy.

In the harbor, light Japanese boats in swift maneuvers managed to cut off ships of the Mongol fleet and set them afire. Four Japanese captains who distinguished themselves with these attacks have their names recorded in the histories of the battle. Their skillful maneuvering surprised the Mongols and forced them to draw their ships alongside each other where they were lashed together with planks laid from deck to deck so reinforcements could rush to the aid of a crew that was beating off a Japanese boarding party. In the meantime, trebuchets mounted on the Chinese ships were hurling rocks and fire ashore in support of the attacking troops.

Details of the battle are not clear, but the invaders failed to win any decisive action during the summer, and their hopes of winning the battle were fading. They returned to their ships during the middle of August and then met terrible disaster. A typhoon struck the ships as they were being carried by a strong tide. The craft were funneled into the harbor entrance where many were hurled into each other and into the rocks by the shrieking wind. Estimates of the casualties among the Mongol forces have varied widely, but probably half were lost.

This storm ended the last invasion of Japan. Kublai tried to organize another attack, but the resources of Korea had been so badly drained that the country could contribute nothing, and the Mongols themselves opposed the idea of seeing their valuable cavalry lost in another attempt.

US MC



KOREA'S

✻ DURING THE EXCITEMENT OF battle the fighting man seldom thinks of being wounded or of what will happen to him if he does become a casualty. It is in the lulls before and after the fighting that he thinks about such things.

And if we take advantage of training periods to tell him what the medical people can do for him, he is likely to go into battle more confident than ever that if he is wounded he'll be in competent hands; because Navy doctors are hard on the heels of the advances in warfare with improvements in battlefield care of wounded.

Doctors are apt to be cautious about lauding new medical discoveries. Men of science are a modest and distrustful lot. It takes a great amount of proving for a new medical technique to gain its place in normal procedure.

Looking back on the Korean war, Navy doctors who served with the 1st Mar Div then are more inclined to laud the helicopter and armored vest than to speak of their own exhaustive efforts in the medical field.

"World War II had its wonder drugs—the Korean war had the

'S CONTRIBUTION TO MEDICINE



By Capt Verle E. Ludwig

whirlybird and the flak jacket."

The war in Korea did advance a number of medical techniques, these doctors admit. But the flak jacket and the 'copters probably saved more lives. When a man was hit by something the vest couldn't stop, it was often the versatile flying "eggbeater" that got the patient to the forward hospitals in time for medical science to have a better-than-ever chance to save life and limb.

These doctors tend to understate modestly the part they played in helping the torn men who came back to them from the front lines. But it was these doctors who used the new technique of artery grafting which is said to have reduced amputations by two-thirds.

Also, these doctors found a workable way to use spinal anesthesia on battle patients. Doctors had held previously that spinals are not suited for cases just minutes from the front lines because of the danger of recreating the conditions present in shock.

And they battle-proved the new drugs that take up where penicillin leaves off. They have retired the World War II veteran, blood plasma, and signed on superior recruits in the form of serum albumen and a sugar extract.

In their hands a poison used on the blowgun darts of certain South American back-country tribes has promoted greater facility in anesthesia techniques of preparing wounded men for surgical treatment. Another new drug called norepinephrine has been important in overcoming cases of shock. This new

drug, which saw its first war in Korea, is an adrenalin-like drug without some of the possible bad side-effects of adrenalin.

And the doctors farther back on the Navy hospital ships took over where the World War II German doctors stopped in the use of intramedullary nails in the treatment of bone fractures.

Drastic German methods of internal splinting of bones to keep the Luftwaffe pilots in the air, now is a technique accepted in a number of cases by American surgeons; but it is used by our doctors because of the advantages of the process to the patient involved, not because of a manpower shortage as was the case in the Nazi air force.

The armored vest made wounds of the extremities the common injuries of the Korean war, the Navy doctors state. If a man in WWII had stopped enough shell fragments in an arm or leg to make the grafting of an artery essential to saving the limb, chances are he also would have caught some of the fragments in his chest or abdomen and they would have been fatal.

The arterial graft surgery, as pioneered in forward hospitals by the Navy doctors serving with the 1st Mar Div, repairs a severed blood vessel with a section of undamaged artery sewed in to bridge this damage. The artery sections the doctors used in the grafting came from "artery banks" stocked from limbs previously amputated.

Following August of 1952, when lieutenants Frank C. Spencer and Ray V. Grew introduced this spec-

tacular new operation to the forward medical company hospitals of the Korean war, nearly 90 such grafts were performed by them and other Navy doctors. For the most part, those Leathernecks are again using limbs that might now be replaced with artificial arms or legs had the arterial grafting not been available.

Less spectacular, but just as important in some cases, are the advancements made in anesthesia drugs and techniques since WWII and combat-tested in Korea.

Navy doctors treating wounded Marines in Korea largely quashed the theory that a spinal anesthesia should not be given to a battle patient who had been in deep shock. Shock is always a serious consideration in injury cases, doctors point out. Shock can kill when surgery and other medical care has started an adequate repair of the wound.

In shock the patient's blood vessels are dilated—enlarged, flabby and suffering from loss of "tone." That causes a serious lowering of blood pressure, and a spinal anesthesia deadens the nerves leading to blood vessels. This can further relax the vessels and possibly re-create the conditions present in shock.

But doctors point out that spinals are desirable in certain cases, for example where a general anesthesia might cause respiratory complications. So now they've found that a spinal can be given without danger when backed up with careful observation of the blood pressure of the patient, the use of whole blood during the surgery, and the employment of norepinephrine and similar



A poison from the blowgun darts of South American back country tribes has facilitated anesthesia techniques

"vasopressor" drugs.

Norepinephrine, the adrenalin-type drug, sustains blood pressure when the pressure can not be held up solely by replacement of an inadequate blood volume by use of whole blood. It does this by constricting the blood vessels; but it does not speed the heart action.

Another aid in anesthesia is a drug that jungle natives in South America have been using for hundreds of years on poison darts. On the tips of darts fired from the native blowguns, curare the poison, paralyzes prey or foe. Curare the drug, highly refined for medical use, relaxes muscles so that the patient need not be lowered to the complete relaxation stage that would be required with a general anesthetic alone.

For example, a Navy doctor explains that an abdominal operation using only general anesthetic such as ether would require a patient to be placed in the third plane of the third stage of anesthesia. This is the lowest possible safe level, and could cause complications in certain cases incident to battlefield conditions.

But with curare available, the general anesthetic can be used to place a patient in the first sleeping phase so that he will realize no pain and then the paralyzing drug used to further relax the wounded man.

Doctors point out that curare was first used medically late in WWII, but not in forward battle hospitals.

The WWII wonder drug, penicillin, still is holding up like the veteran it has become in medical use both in war and in peace. But a number of new recruits have been added from the latter part of WWII and since, to form an entire squad of bacterial fighters. Now they have all been battle-tested in Korea and have taken their places as assistants

to their famous brother.

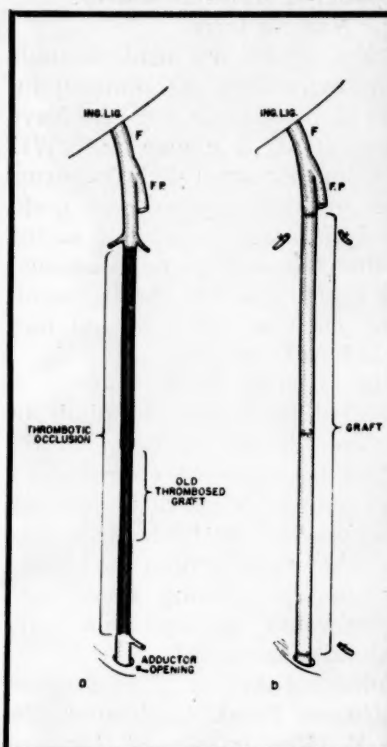
Streptomycin, aureomycin, terramycin, chloromycetin and bacitracin, like penicillin, are what the doctors describe as "bacterio-static drugs" which inhibit the growth of bacteria so that normal body function can take over to control infection.

These new drugs all have their own work cut out for them. They specialize in attacking different organisms, each in its own field of capabilities. Thus the new ones often take up where penicillin stops.

Blood plasma, another veteran of WWII, has been forced into retirement by serum albumen and a sugar extract usually identified by the trade name of Dextran. Both had their first battlefield tests in Korea. Plasma no longer is used, doctors explain, because it sometimes spreads a virus that causes jaundice. Besides, the new products are better.

Plasma replaced lost blood fluid volume per fluid volume. Serum albumen does better than that because of its higher viscosity which draws additional fluid into the circulatory system from body tissues through osmotic pressure—the basic biological fact that when two liquids are separated by a membrane the

Left — the theory. Right — practical application. This arterial graft saved the life of a 25-year-old Marine whose thigh artery was destroyed by a mortar fragment



denser liquid will attract and "pull" the thinner fluid through.

The dextran solutions, even later recruits than serum albumen at the Korean front, are cheaper and somewhat better than the serum. While serum albumen can tend to dehydrate the body through its osmotic action, the dextran solutions, called "plasma volume expanders" by the doctors, do not have this action.

Whole blood still is used by doctors, of course, But the storage problem precludes its being kept in forward aid stations or carried by corpsmen serving with frontline platoons. That's where the plasma replacements play their most important roles.

Incidentally, veterans of the malaria zones of WWII were pleased to learn in Korea that atabrine, the bitter little pill which kept the mosquito-borne disease in check but at the same time turned the user a billious hue of yellow, had been replaced by a larger pill called chloroquine. Sometimes this new pill even came in an attractive, pink candy coating. It does away with the daily "atabrine cocktail hour" since only a once-a-week dosage is required.

In reference to the use of intramedullary nails in the setting of broken bones, most Navy doctors consulted confessed that they thought the system drastic when they heard that German doctors were using these stainless steel tubular "nails" to get fliers with broken legs out of their hospital beds and back into the air over Europe and England during WWII. But now they've found that in a number of cases the system brings excellent healing results and at the same time makes the patients more comfortable.

Most often used in the case of a fractured thigh bone, the intramedullary nail is introduced into the medullary canal in the center of the bone. Then it is driven down the entire length of the bone, thus giving sufficient immobility to the fracture to allow for rapid healing.

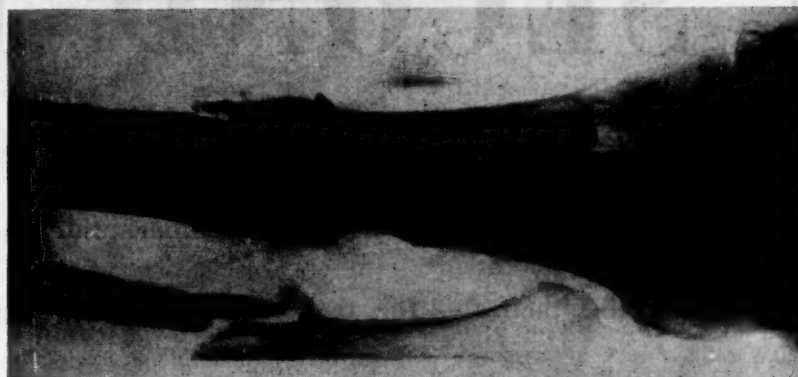
Having such an "internal splint" actually inside the bone makes uncomfortable external casts and complicated traction splints unnecessary in most cases. Often the patient can be up and around on crutches while the break is healing. Otherwise he might have to remain flat on his back with a traction system pulling

his limb straight during mending.

Most of the use of intramedullary nails in the Korean war was in rear-area hospitals. Marines needing such treatment normally got their internal splints applied in the Navy hospital ship in Inchon harbor some 30 minutes by helicopter behind the front lines. The nails are used in the lower leg bone sometimes and less frequently in arm bones. In all cases, of course, they are removed

after healing is complete.

Doctors agree that wars usually bring about medical advancements much faster than they might have developed in peaceful surroundings. No one, though, will say that a war is worth it. In peacetime, the men of science are not inactive. Now that the shooting has stopped in Korea, doctors are continuing their studies of these new techniques and striding toward more progress. USMC



During WWII Marines with broken limbs were treated by the effective, but awkward, immobilization technique (lower picture). In Korea, the intramedullary nail was introduced—more efficient and more comfortable for the patient. Center picture shows an X-ray of an intramedullary nail used to repair a broken tibia. Top picture shows the nail used with a metal ball to replace the natural joint in a shattered hip. The screws serve to pull the broken ends of the bones together.

EMBARKATION— *the* SECOND PHASE

To be able to talk 'embarkation' you must be able to
talk 'tactics'—for tactics, especially the proposed
scheme of maneuver ashore, plays a controlling part
in preparing certain parts of the embarkation plan

THE EMBARKATION PHASE OF AN amphibious operation, is, as most Marines know, only one of 6 phases. Except for the Movement Phase, it is the one phase in which *all* ground troops of a landing force participate. Although many officers and men participate to a limited degree in the other phases, embarkation is the one phase affecting almost all personnel.

Many Marines are not required to participate in planning, especially on the lower command levels. Not too many men, in comparison to the overall size of the landing force, get ashore to participate in the rehearsal. Although all troops get ashore during the assault phase, many of those composing the troop list come ashore after the beachhead is relatively secure. Many troops, especially combat service support troops, do not participate in fighting which is characteristic of the consolidation. All troops are affected during the

movement, but this is strictly a Navy evolution (not considering of course, troops moved in by air) over which the individual has no control and to which he can contribute little. But embarkation, which is the first joint action taken by the landing and naval forces, affects each and every Marine of the landing force.

Because embarkation does affect all members of a landing force, it seems plausible to assume that embarkation, both planning and execution of it, should be a matter of common knowledge, the degree of knowledge being directly proportional to the length of service of the individual. Perhaps such an assumption is baseless, for the opposite appears to be the condition today. Even worse, the attitude toward embarkation appears to be something like this: "Embarkation is a job for the specialists; let him take care of it. Don't bother me"; or, "Embarkation? That involves ships, and I

never could understand ship organization"; or worse yet, "Let's talk tactics. Embarkation is a logistician's job, not mine." And the amazing, unfortunate and detrimental aspect of this attitude is that it is general throughout the Corps.

The truth of the matter is that certain aspects of embarkation are a job for specialists. The further truth is that anyone who is to talk "embarkation" must be able to talk "tactics" and talk it intelligently, for in the preparation of certain parts of the embarkation plan, tactics (especially the proposed scheme of maneuver ashore) plays a controlling part.

The importance of embarkation cannot be over-emphasized. History provides accounts of near failures of amphibious operations sufficient to warrant objective and exhaustive study of them. A contributing factor frequently has been inadequate embarkation planning. While there

may be records of a more disastrous expedition than Gallipoli, none is more familiar to Marines. Of the 78,000 troops selected for the expedition, those embarked from England were loaded aboard transports in hopeless confusion. The whole force had to be reloaded since all the equipment had to be unloaded and restowed so the the landing troops could get at what they needed when they wanted it.

Time was when "combat loading" was the sole consideration, insofar as embarkation is concerned. Combat loading was embarkation. It was recognized soon after Gallipoli that ships lifting a landing force must be so loaded that the troops and equipment can be unloaded in a manner to best support the tactical plan ashore. Now, it is recognized that not only does the tactical plan affect combat loading, but it also affects the plan for logistical support, intelligence information, personnel data and planning and capabilities of the Navy. Actually, combat loading, per se, has become an end product of embarkation planning, and only one of the several aspects of such planning.

Today, the basic embarkation of the assault troops is built around the BLT. Several BLTs, embarked according to the dictates of the proposed tactical plan ashore, compose the Embarkation Unit, which of course would be formed around a Regimental Landing Team.

At the Embarkation Unit level we find the first significant effect upon embarkation planning of the problem mentioned above. Consider organization of the landing force for embarkation. While the embarkation organization is primarily a temporary administrative formation of the troop units of the landing force designed to facilitate the ship loading process, that organization is affected by many factors. These affect such organizational matters as size, composition and distribution of landing force units. The proposed tactical plan ashore, and the landing plan are the main guiding factors in organizing an Embarkation Unit.

The subordinate embarkation organizations, the Elements, must compress the BLTs, primarily. Or to put it more precisely, the tactical integrity of the RLT must be main-

tained in the embarkation organization. The plan for logistical support, especially during the initial stages of the assault phase, must be reflected in the organization—shore party and other combat service support personnel required by the RLT must be included. Time and space factors affect the organization—short distances to be traveled at sea to the objective may permit more troop personnel to be carried in ships than normally are carried. The weather even has its effect on the embarkation organization, having the same effect in warm weather as short distances to be traveled. In cold weather the opposite effect is noticed with fewer troops carried. Ship facilities, especially on smaller ships, may permit fewer troops, even during warm weather. Hydrography at the objective may affect the embarkation organization—perhaps there will be a smaller cargo limit on the LSTs which are to beach during the first few hours.

These limitations may require augmentation of the shore party group composing part of the Embarkation Unit. These are but a few of the considerations affecting composition of an Embarkation Unit. One consideration worthy of note would be the dispersion of troops among the various ships. So that all of our eggs will not be in the same basket, should a ship or several be lost, the dispersal of division troops among the RLT Embarkation Units is sound practice.

The problem of organizing for embarkation is as great as the combat loading process; certainly it is as important.

The embarkation plan which sup-

ports the tactical plan has satisfied only one of 3 essential requirements. Support of that tactical plan is reflected primarily in the embarkation organization decided upon. The second requirement is that the embarkation plan must be in consonance with the plan for logistical support. The distinction between it and the Administrative Plan must be recognized. The Administrative Plan is more specific. The Embarkation Plan is not physically a part of the Administrative Plan. But, because the Administrative plan is specific, it affects embarkation planning.

For example, the embarkation plan must provide for allocation of critical material to the assault shipping in a manner which will support the plan for logistical support as specified by the Administrative Plan. Also, embarkation planning results in a determination of ships required to transport not only troops and their equipment, but also the level of supplies prescribed by the Administrative Plan. That part of the plan for logistical support which covers the supply build-up, after the assault elements are established ashore, figures in embarkation planning also for determining ships required and estimating unloading time are responsibilities of the embarkation planner.

The handling of our own casualties in the initial stage of an amphibious operation is a matter of concern to the embarkation planner. For such ships as the LST which are to be converted to hospital landing ships (LSTH), are selected upon the advice of the embarkation officer, who must be in a position to know

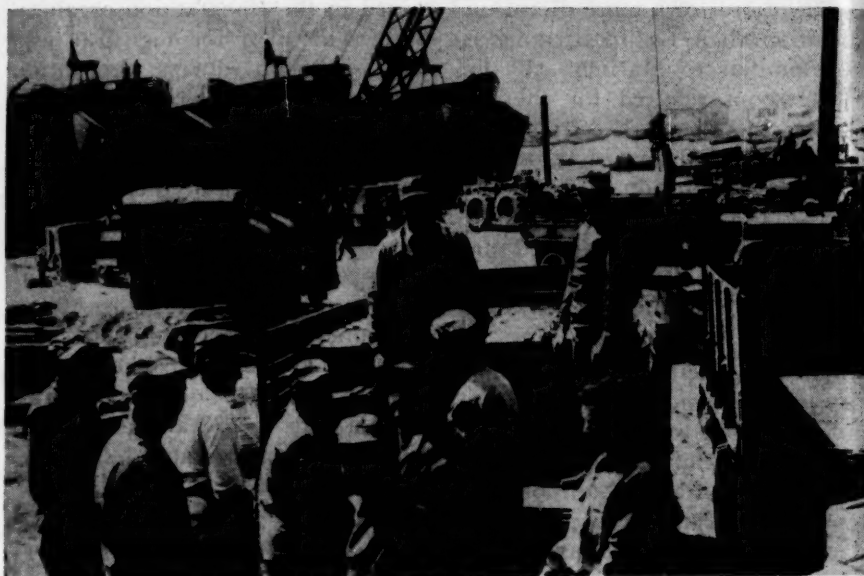


which LST will be unloaded first, and thus available in time for processing of casualties.

The third requirement is elementary, but often overlooked. This important point requires that the embarkation planner assure that the plan will be in conformance with the capabilities of the Navy. Although the scheme of maneuver ashore in an amphibious operation is developed primarily from the landing force point of view, it must be capable of effective support by naval forces. From the embarkation angle, this means that we must not plan to load certain types of heavy, high priority equipment (like vehicles), in a ship until we know the ship's loading characteristics. This means also that we must not plan too heavily on the use of certain type ships (LSDs, for example) until we know definitely that they are available.

To eliminate unilateral planning and prevent loss of time and effort because troop commanders are not always aware of the capabilities of the Navy, 3 important procedures are followed: 1) we have Marine officers permanently assigned to those Navy staffs (including 3 APAs and AKAs) that are concerned with amphibious operations or with employment of a Fleet Marine Force; 2) each ship of the amphibious force which might carry troops is required to prepare, distribute and keep up-to-date a ship's loading characteristic pamphlet; and 3) at all troop levels, the establishment and maintenance of liaison with the corresponding naval echelon.

Liaison is absolutely essential. Embarkation represents the first joint action affecting the landing and naval forces in an amphibious operation. If that action is to be successful, and reflect the requirements of the tactical and logistical plans, there must be continuous, close and harmonious liaison between the troops and the Navy. Furthermore, it is the responsibility of the *troop* commanders at the various embarkation levels, (team, element, unit and group) to establish that liaison. In both planning and execution, embarkation becomes a mutual responsibility of the troop and naval commanders at all of the various levels.



Designation of Embarkation Organization

The evolution of our early amphibious doctrine established that an essential requirement is the establishment of a parallelism of command between the naval commanders and the landing force commanders. More specifically, insofar as the embarkation phase is concerned, it means that for the embarkation team there will be a parallel naval command: the ship in which the team is to embark. For the Embarkation Element, there will be the Transport or Landing Ship Element; for the Embarkation Unit there will be the Transport or Landing Ship Unit; and, for the Embarkation Group (at troop division level) there will be the Transport Group. This system provides a true corresponding command structure.

Prior to the adoption of this system, it was relatively easy to refer to a specific embarkation organization, for there was only the Embarkation Group (at regimental level) and the sole subordinate, the Embarkation Team. Thus, referring to groups as Embarkation Group ABLE, for example. Each team of the group would be numbered, the team being called, for example, Embarkation Team ABLE-5. No other system could be as simple.

The introduction of the echelon *Embarkation Element* with the moving of the Embarkation Group to division level and the substitution of group by Embarkation Unit, has



resulted in considerable difficulty in designating and keeping separated the embarkation organizations at the various levels. Even though the embarkation organization is only a temporary task grouping of the landing force, it is essential that the components of the organization be systematically designated.

I propose that the following system be adopted by the Marine Corps. It has been critically compared with other proposed systems, and I believe it to be the best, possessing necessary flexibility.

Assume that for an amphibious operation the amphibious troops commander has 2 Marine divisions (1st and 3d Mar Divs) and force

troops under his command. He designates each division and the force troops as an embarkation group and identifies them as Embarkation Groups ABLE, BAKER and FORCE, respectively. Considering one embarkation group, say BAKER, the 3d Mar Div, organized into 6 embarkation units. The Embarkation Group commander (CG, 3d Mar Div) designates the embarkation units as Embarkation UNIT BAKER-1, BAKER-2 and so on through BAKER-6. Considering BAKER-2, the elements composing that unit would be designated by the embarkation unit commander as Embarkation Element BAKER 20, Embarkation Element BAKER 21,

BAKER 22, and so on through BAKER 29. Similarly, the embarkation teams of any particular embarkation element would be designated by adding a 0, 1, 2 and so on through 9 to the element designation. The teams of Embarkation Element BAKER 29 would then be Embarkation Team BAKER 290, 291, etc. This system will adequately account for all embarkation organizations of a reinforced division, since 100 ships per embarkation unit could be accommodated.

The Embarkation Commander

Those officers who have primary responsibilities relative to embarkation of the various embarkation organizations are known as the Embarkation Group, Unit, Element, or Team Commanders. Almost invariably, RLT and BLT commanders are also embarkation unit and element commanders during the embarkation phase.

At the lowest embarkation level, the embarkation team commander is responsible for all aspects of loading of his team. The biggest job for this officer is the preparation of the detailed loading plan for the ship in which his team is to embark. This requires close liaison with the assigned ship and a detailed knowledge of the proposed tactical plan ashore, as the team is affected.

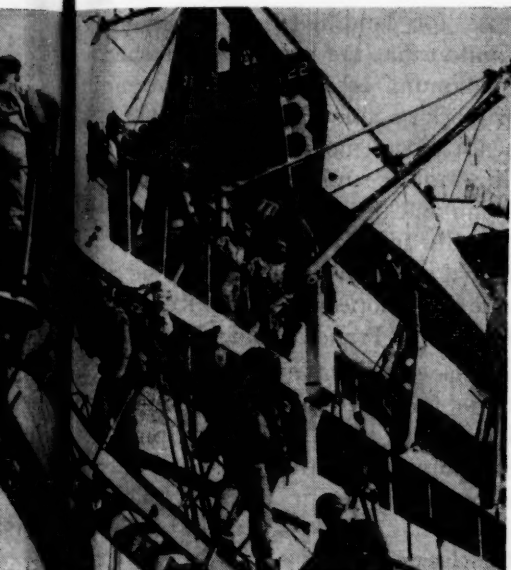
The embarkation team commander is frequently confused with the commanding officer of troops. The embarkation team commander

is the officer who is responsible for planning and supervising the embarkation of the team, and his responsibilities end when the personnel, supplies and equipment of the team are embarked. The commanding officer of troops is the senior officer of the embarked units. He may or may not have been the embarkation team commander. The embarkation team commander should be the senior officer (of units embarked) whose unit has the paramount interest in the unloading and loading of the ship.

The embarkation element commander assists and co-ordinates the efforts of his teams. If a BLT is embarked in an APA and 3 LSTs, the BLT commander could possibly be 1) the embarkation team commander of the ship in which he is embarking, 2) the CO of troops in his ship, and 3) the embarkation element commander. The element commander usually prepares an embarkation order, based on the unit embarkation order, for the guidance of teams of his element.

The embarkation unit commander assists and co-ordinates the embarkation efforts of his elements. Generally, the unit is at the regimental level. In the infantry regiment the assistant S-4 is also the embarkation officer. The embarkation officer is the Marine who receives specialized embarkation training and who does the detailed work for this embarkation commander. The infantry regiment is the lowest echelon in the Marine division where there is an embarkation officer. Consequently, much detailed work is done at this level (embarkation unit) which would otherwise be done at the element level.

At the division (embarkation group) level, the division embarkation officer accomplishes planning and co-ordination appropriate to the level. Theoretically, the embarkation group issues instructions to the embarkation unit, which interprets them and then issues instructions to the element. The element then issues embarkation instructions to the teams. However, embarkation planning is much like that which produces the landing plan; it is so important and so detailed that the group (division) commander must at times resort to "two-down" planning.



In the check and balance procedure so characteristic of embarkation planning, it may be necessary for the embarkation group to issue specific instructions to teams.

Looking Ahead

New developments of amphibious warfare, mass destruction weapons possessed by our probable enemy and new doctrines are not without their affects on embarkation. No longer is the problem simply one of loading a transport or two—or even of loading many with comparative freedom from enemy action, such as we enjoyed to a great extent during the war in the Pacific. Today, with a landing force of any size at all, the problem is complex and will continue to be complex.

Mass destruction weapons in the hands of our probable enemy have dictated that we disperse our ship-to-shore movement. Embarkation will be affected the same way. We must not continue to think of ship loading in terms of using a single or two or three ports, but as many as are practicable, even at cost of increased time and money. Ports of embarkation offer a most lucrative target, obviously. Concentrations of shipping must be as small as feasible. Furthermore, ship loading time must be reduced to a minimum. This will require the closest liaison between troop and naval echelons, the most efficient staging-in of cargo to be loaded, and a professional appreciation and knowledge of embarkation problems by those troop officers concerned. Of the above, establishment of liaison and staging of troops and cargo are matters of command responsibility and of working out of details.

The third requirement, a professional appreciation (that is, an appreciation that a Marine officer, appropriate to his grade, should have,) is not as well developed as it should be. It is significant to note that the G-4 of the 1st Mar Div at the time of the Inchon landing observed a "growing tendency among (troop) unit commanders that the business of loading and embarkation is a function of the (troop) unit embarkation officers, who in the case of regiments and battalions are usually lieutenants."

The greatest danger period of the amphibious task force is during the early stages of the assault. It is during these times that the assault shipping is in gravest jeopardy. To minimize danger to the assault shipping, once it is unloaded, it should retire from the objective area. Landing forces can contribute to an early retirement of assault shipping and reduce its own jeopardy by reducing the amount of supplies and equipment initially embarked. We should think in terms of carrying a lower quantity in the assault shipping. Just because we have "always" embarked with 30-day levels is precisely why we should give serious thought to continuing such a procedure. Not too long ago, it was suggested that landing forces should embark a 90-day level of supply. Later that was reduced to 30 days (*Tentative Landing Manual*). At Guadalcanal, 20 days supplies were initially lifted with a planned build-up of 30-day level in 30 days. Later in the war, the amount initially lifted was sensibly reduced to about 10 days for a particular operation. At Iwo Jima, however, we took a couple of steps backward, and a 30-day level was directed. All this in the assault shipping! Little wonder that it took so long to unload the ships—7 to 10 days. The enemy situation which permitted this in 1945 must not be assumed to exist today.

What is true of supplies is likewise true of equipment. Extreme care must be exercised by troop commanders in deciding what equipment should be taken in the assault shipping and what may come in the 1st, 2d, or even 5th follow-up echelon. For example, the Division Service Regt rates 4 shoe and textile repair shops, trailer mounted. Each weighs $5\frac{1}{2}$ tons and occupies 1,700 cu. ft. While these shops are necessary in a division, little justification can be made for phasing in these heavy, bulky items before 2 to 3 weeks of the operation have elapsed. Furthermore, simply because an item is listed in a T/E and may come in handy is not sufficient reason to "take it along, just in case." Nevertheless, we took our 100 cu. ft. refrigerators to Korea. We took our athletic gear and we saw these and

many similar items boxed and crated, many broken and unclaimable, pile high at Inchon after the ships were unloaded.

An intelligently determined list of equipment and a lower required level of supplies will result in ships being unloaded quicker, but only if the "maximum" combat load for amphibious-type ships is reduced. I think that 700 short tons for APAs is at least 25 per cent too high and that for AKAs, 1,500 short tons is 33 per cent too high. Reducing the overall level of supplies and equipment won't result in any ship being unloaded any quicker if the maximum combat load is not reduced. If the assault shipping is to retire more quickly, shorter unloading time is one sure method to assure it.

As for landing ships, it is my opinion that the present established "maximum" is satisfactory. The use of truck-tractors and semi- and low-bed trailers, moving off a landing ship, to be unloaded at a beach dump and then returning to a landing ship for a return voyage to the source of supply may one day be as highly developed as was the Red Ball Express in France during WWII.

The employment of helicopter borne forces requires that the majority of the troop units' equipment and supplies be lifted in ships other than the carriers.

Conclusion

Embarkation planning is a multifaceted process, reflecting requirements of the operations plan, the plan for logistical support and the capabilities of the Navy. Thus, it differs from the other planning encountered in amphibious operations. Its effects are felt long after the embarkation phase is completed. Indeed, its effects are felt at a crucial time in the amphibious operation—during the assault phase. At this time, it is too late to learn that the embarkation planning and execution have been defective or incomplete. Because of the inter-relationship between the embarkation plan and the troop tactical plan, it is mandatory that troop unit commanders personally have a full appreciation of all aspects of embarkation.

USMC

HELL with ROTATION

By Capt J. L. Lowe

ROTATION IS NO GOOD! IT HAS never been any good. It never will be any good.

To achieve optimum efficiency a unit must train and fight as a whole from the beginning of a training cycle or campaign to its completion. To achieve a feeling of comradeship, group solidarity, confidence in their leaders, loyalty to the unit—be it fire team or battalion—troops have to be stabilized in their units. To achieve a feeling of confidence in the control of their units and knowledge of their subordinates, unit leaders—fire team or battalion—must command their formations for longer than the period of time allotted by rotation.

One objection to the system described would be that in the event of heavy casualties, a unit must have replacements. For this purpose limited numbers of replacements could be sent to the combat area, but once in their organizations they should remain with them, even if a particular outfit pulls out within the week to return stateside.

"But," states another critic of unit rotation, "would you not have a whole unit imbued with the 'short-timers' attitude as time for relief drew nigh?"

Maybe, but if the unit was to remain together after return to the states, what man would care to chance the disapproval of his mates by failing to do his utmost up until the last minute? This attitude would probably be manifest in almost every man in the battalion.

A unit rotation system is feasible as demonstrated by the success at-

tained with it by the British. The Marine Corps could and should adopt it not only for units on duty in the Far East, but whenever possible for units engaged in any future "bush wars." A personnel rotation system can never produce unit esprit comparable to that found in a group of Marines who have been together for a long period of time in training and in combat, who know and trust each other and who can wryly sing, "There'll be no rotation, this side of the nation"—until the whole damn battalion goes home!

How many replacements felt any sense of belonging to their units in Korea under the rotation system? Trained in a replacement draft stateside, dumped into a ship's hold, separated upon arrival in Korea from his friends, thrust into a group of strangers, torn between the examples of the "hard chargers" and the "play-it-safe short-timers," what Marine replacement said to himself, "I'm one of the best in one of the best and I'm going to do my best." Instead, his attitude in many cases was to hard charge at first and then "play it cool" as time for homecoming approached.

Unit commanders, platoon leaders, company and battalion commanders seldom commanded their units for a sufficient length of time to grasp knowledge of their units' capabilities. They were seldom able to impose their wills and personalities upon their subordinates in the time allotted and were never there long enough to inspire the fullest measure of loyalty. Who could feel such loyalty to the "Old Man" when both

he and the unit's policies changed every 120 days?

Is it any wonder then that the Marines in Korea cast envious eyes at the British Commonwealth Division and their system of unit rotation? Think what it would have meant in terms of combat efficiency if, instead of replacement drafts regular units had been sent to Korea intact to replace like organizations who had completed their tours of duty. Let us say, for example, that the battalion known as 2/7 had been in action for a year. A warning order was sent to 1/8 at Camp Lejeune to prepare to move within 30 days to Korea. Think of the shot in the arm it would have provided for 1/8 training in the swamps of the Carolinas! The platoon leaders would have said to their men, "Listen up! Learn this! Within two months we fire for record at targets which will fire back!" The company commanders would have been able to say, "Yes, Colonel, my company is ready to fight. I've been with them here at Lejeune for a year. I know every man in the company. We're hot to trot!" The individual Marine would have said to himself, "I know every man in this squad. I've trained, lived, scrapped and pitched liberty with every one of them. I trust them. They won't let me down and I'll fight for them."

This unit when it arrived in Korea would have presented a more formidable appearance marching ashore than 3 raggle-taggle battalions of unhappy, confused replacements.

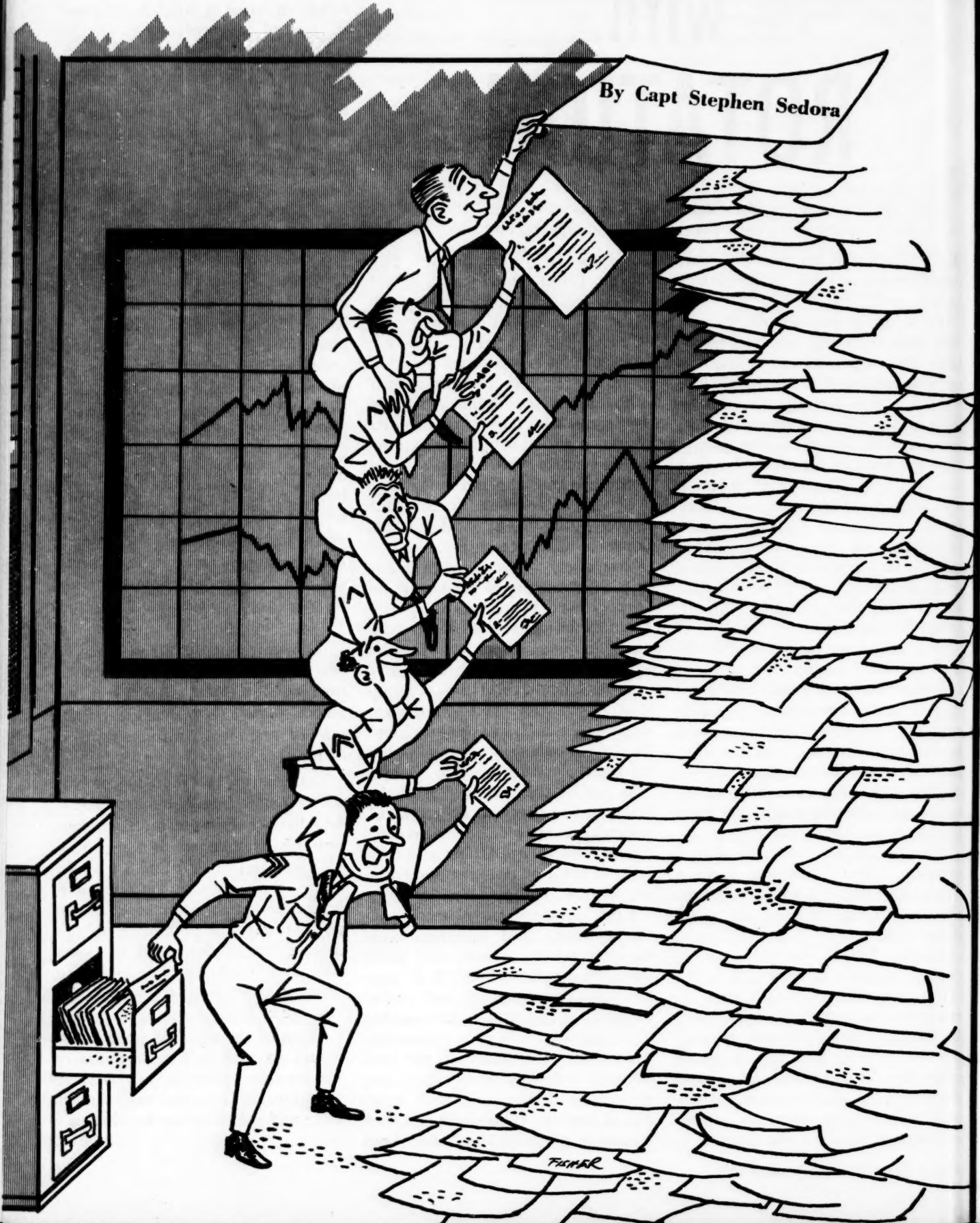
Replacing a battalion in combat, the new unit from the States would be a hard-charging team. Each man would be well-known to the man on his right and his left and all would know their leaders. Confidence, born of long association together can go far toward the promotion of high morale and efficiency. A battalion that first trains together and then fights together is a hard unit to discourage or defeat.

What of the replaced unit? They would go back to the Carolinas or California—there to join a Stateside division and lend their knowledge and spirit to the division as a whole.

USMC

THE CLERICAL

By Capt Stephen Sedora



FISHER

THE PYRAMID

**An army of clerks sweat to compile the miscellaneous collection
of useless information required by our paper empire**

THE MARINE CORPS HAS BEEN engaged in a crying jag; an orgy of self-pity for the past 2 years. The reason for all the tears is the shortage of trained personnel. Undoubtedly there is a shortage in the specialist fields, such as electronics, but the shortage has also been bemoaned in the clerical field. It is time to quit crying and see just how short of clerks we are. An intelligent review of our procedures and office management practices will show that our T/O is padded with clerical personnel. In spite of the fact that most organizations are 30 per cent under T/O strength in the 01 field the job can be done efficiently with even less.

In the years before WWII, company headquarters consisted of a first sergeant (second pay grade, now E-6), a gunnery sergeant (also second pay grade), a property sergeant and a corporal clerk. Why is it necessary today for a company to have up to 7 clerks? The answer most Marines will give is that administration has increased by leaps and bounds since the war. Ever since 1942, when the Secretary of the Navy issued a directive that all echelons of command cut down on their paper work, the Marine Corps has been saddled with more and more administrative problems.

Throughout the war years, it's true, the Marine Corps suffered growing pains. It found that its system of administration was not satisfactory when applied to the division-size unit in combat. To plug the holes in the system, the Marine Corps patched and improvised. If one report wasn't satisfactory, a new report was designed but the old one was not cancelled — paper work pyramided — there was the muster roll, the tri-monthly report, the 49

report and the daily change sheet to get out.

Administration was moved out of the company and put in the battalion. A new job was created. In fact a whole new series of jobs were created. There was a personnel officer, a personnel sergeant major and a slew of personnel clerks. The people in these new billets were doing the same job that the old company clerks had been doing. However, the company clerk billets were not abolished. Someone had to send in the information from which all the various reports were compiled. The company clerk gathered and reported the information and the personnel section recorded it. Two sets of individuals doing one job.

The personnel section was subdivided into a service record section, a pay section, a muster roll section and a change sheet section. This was done in the name of efficiency. That it did not result in efficiency is a known fact. In late 1944 for example there were some 10,000 Marines "lost" in the Pacific. FMFPac knew they were somewhere in the Pacific area, nothing more. Differences in certain Marine Corps Headquarters strength figures exceeded 20,000 from time to time.

Records which had been kept by one man were now kept by 3 or 4. Everyone in the personnel section, from time to time, used the record books. When entries were to be made, the books were not in the record book section, they were being used by some other section. Consequently, the entries were not made or made from memory at a later date.

To overcome this difficulty, card files were designed to duplicate the information contained in the record book. This worked fine because each

section now maintained all the records. They were back to the company clerk idea except that only one of the many records kept by each section was official. The sections grew by leaps and bounds in order to carry the load. A perfect example of pyramiding administrative practices — making one man keep on a card what another man keeps as a permanent record. Comparing the muster roll and service record books of the same organization made you think that 2 organizations had been given the same designation. The name was often the only thing in the 2 records that was the same.

Headquarters was aware of the deficiencies of the personnel administration system and immediately after the war it began a study to overhaul and simplify it. The new system had to correct many things but 2 main ones are worth emphasizing — timeliness and accuracy. With 3 or 4 people making entries in service record books, it was impossible to place responsibility for erroneous entries. HQMC, in the last year of WWII assigned one individual to processing muster rolls per division. This meant that the information was at least 90 days old but it was the only way to get reasonably accurate information. Timeliness had to be sacrificed for accuracy. The new system had to be timely.

Second, permanent records had to agree. The card files from which reports were made were extremely difficult to keep current and in agreement with the service record book. The majority of research work done at the Marine Corps records library in Garden City, New York today is done to determine whether the service record, pay record or muster roll has recorded the correct date. Discharged Marines



often claim that none of the dates recorded is the correct one. The new system had to insure that permanent records were accurate and in agreement.

Overhauling and simplifying personnel administration was a tremendous job but in 1949 it was completed. A new system which threw out everything but the daily ration statement was published. The system is simple, understandable and, if given a chance, will work. One report, the unit diary with IRC attached, replaced the morning report, muster roll, 49 report and change sheet. The Navy pay record was adopted. This certainly simplified administration. But did it? Unfortunately no. Why?

Faulty office management is the primary cause for administration continuing to be complex. With the pay record taken out of the organization and maintained in the disbursing office, it would seem there would no longer be a pay section. Such is not the case. In those organizations which utilize company administration, it would seem that the personnel section would be deleted. Oh, no! It is still very much with us.

The old company clerk kept the service record book, including the pay record. Each month he prepared two special money requisitions and a pay roll (all now prepared by the disbursing office). He submitted a muster roll once a month, a tri-

monthly 3 times a month, and a monthly 49 report. Each day he prepared a morning report and a change sheet. Today, if administration is in the company, service record books (includes officers qualification jacket) must be kept, a unit diary prepared, and Orders to Adjust Account (NAVMC 800 series, commonly referred to as pay orders) submitted to the disbursing office. Yet today up to 7 clerks are on the T/O for these jobs.

Now, as in the pre-war years, ration statements, company correspondence and training schedules must be prepared in the company office and the company files must be kept up. With a reduced work load, the T/O calls for more clerks. Instead of giving one clerk the complete records, we have organized our company offices into sections. Thus we find a file clerk, unit diary clerk, pay clerk, service record book clerk and correspondence clerk in most company offices. The amazing thing is that they keep fairly busy.

There is a regular routing system set-up for getting papers through the various sections. The clerks are kept busy shuffling papers from "in" to "out" baskets. This time consuming shuffling in the various sections keeps administration forever lagging. The last section to get the paper is at least a week behind. Each of these sections is independent and has no idea how their work ties in with the work of the other

sections. They never see the whole picture of personnel administration. Therefore, they are untrained. The whole procedure doesn't make sense to them. One FMF battalion commander checked leave records in his record books against the leave rations credited on the pay record. Eighty per cent didn't agree.

The new personnel system then seems to have failed. It is not the fault of the system. It is the fault of the supervisors — the commanders, adjutants, sergeants major and first sergeants — who have not organized their offices to execute the system. To understand how the offices should be organized, it is necessary to possess a working knowledge of Marine Corps General Order 47. Don't let its size scare you. A great deal of the space is taken up with illustrations.

The new personnel system is based on 3 permanent records: the unit diary, the service record book and the pay record. The individual record card (IRC) is the backbone of the system. The IRC is designed to show in abbreviated form all the information contained in the record book. There are blank spaces on the card to record information that is not contained in the record book. The back of the card is designed as a work sheet. The IRC is filed in visible file folders. Colored tabs are furnished so that they can be attached to the cards of individuals in special categories. More will be said about those blank spaces and col-

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ored tabs later.

The unit diary is a daily report of the things that happen to the unit and the individuals in it. It covers a 24-hour period except for holidays and weekends and always ends at 2400. The unit dairy is submitted to a machine records installation (MRI) which codes the information and reports to Headquarters the information that was once reported in the muster roll, 49 report and change sheet.

The service record book contains a complete chronological record of everything that a man does from the day he enlists or is commissioned until he is retired or discharged.

In order to make our personnel accounting timely and accurate, personnel records must be kept in company or section groups. Regardless of whether an organization has its administration in the company or battalion, we must go back to the company-clerk type of organization. The IRC being the basic work sheet, one man must keep all the records. He makes entries on the IRC as soon as he receives information that should be recorded. The IRC is not replaced in the file folder. It is kept with other cards that have entries on them. The first thing in the morning, the clerk arranges the IRCs that have been set aside. These are arranged first according to "remark" and then alphabetically. The unit diary preparation is then nothing but a typing exercise. When

the diary is typed, he takes the same IRCs and records the information in the record book. Using the same IRCs, he types the proper pay order required for the previous day's events. The clerk delivers these 3 pieces of work to the first sergeant or sergeant major so they can be checked. The diary, record books and pay orders are placed on the adjutant or company commander's desk together.

In this way, the 3 permanent records are checked against each other at their source. There is no time lost shuffling papers from in to out baskets. Administration is current. When a man returns from leave, he is paid his leave rations the following payday. The battalion commander referred to previously, whose leave records did not agree with the pay records, organized his administration so that one clerk prepared the unit diary, kept the record books and wrote the pay orders. Three months later, less than 10 per cent of the leave records did not agree with the pay records.

Commanders, adjutants, first sergeants and sergeants major will growl, "Our clerks aren't that well trained." That has been the cry for the past two years. Let's grant that they aren't that well trained. How long will it take to train them?

The pay order is the simplest sort of a form. If a person has the ability to type, he can be taught to make a pay order in half an hour at the

most. The instructions on the service record book are contained in about 15 pages of the *Marine Corps Manual*. Surely an hour a day for a week should be sufficient to give a man a working knowledge of that much material. He doesn't have to know it all, there is always a manual handy for him to look it up. The instructions on preparation of the unit diary are long. It might take as long as a month, at an hour a day, to teach a man its provisions.

However, look at the bright side. Someone in the office is presently preparing the unit diary. In a little or no time, he can be taught to prepare both the pay orders and to maintain the service record book. Release the other clerks. They really aren't needed.

Everything that requires an entry in the record book except conduct





and proficiency marks and UCMJ lectures is also reported on the unit diary. Qualification firing is not reported on the diary but neither is it entered by the administrative command. Qualification scores are entered by the range. Therefore, the everyday work load of a unit can be determined by the number of diary entries. A recent survey of units serviced by the Quantico MRI showed that 20 companies with 4 to 7 clerks each made an average of 200 to 300 entries on the unit diary per month. Only one company had as many as 300 entries. Since there are an average of 22 working days per month, excluding Saturdays, this means that those 4 to 7 clerks had an average of 8 to 14 entries per day on the unit diary and in the record book. Not nearly so many will require pay orders. These 8 to 14 entries are certainly not too much to require of one clerk.

Every administrative inspection points out numerous errors. None of these errors can be traced to one man. Consequently, they are placed on the shoulders of everyone in the office. If one man writes the diary,



keeps the record books and types the pay orders, responsibility can be fixed. A man can take pride in his work. Under a system where 2 or more individuals work on one thing, he can't take credit for the good and must take the blame for the bad. There is no incentive for good work.

The supervisors are bound to say, at this point, that their particular companies are too large for one man to handle. Therefore, they must have sections to do the work. Nothing could be further from the truth. General Order 47 recognized this possibility and provided the method for dividing a company into different reporting units. Each clerk can be assigned the number of men he can handle. This number is determined by the number of items reported, not by the number of men.

Suppose we accept this organization and agree that it will work; the supervisors say we are behind and must have those clerks and sections to keep work current. Again, this is not so. The new system provides an easy method of catching up. First, do today's work today. In that way you can never get any further behind. Do not work on the backlog first. An entry required today and made today can be made in 5 minutes. Next month, the entry will take half an hour or longer.

Second, the IRC is the basic work sheet so make it current first. Make the occurrences section agree with the entries made on the unit diary. When all IRCs are up to date, keep them that way. After today's work is completed, bring one service record up to date by making the entries that are on the IRC. The time consuming part of making entries in the record book is that of taking it apart and putting it together. A dozen entries take very little more time than one, provided they are made at the same time.

Third, when all record books are up to date, check the leave record against the pay record and make such adjustments as are necessary.

How about all the other jobs that have to be done? Who is going to keep track of the personnel who have to have UCMJ lectures each month? The answer is that nobody will. When an individual joins, an IRC is made out and filed. At that time, tab it to show the month the lecture is required. A glance at the

IRC file will show who needs to attend a UCMJ lecture at any time.

General Order 47 requires that certain information be shown on the IRC by means of colored tabs. It also states that other information can be shown by tabs in accordance with the needs and desires of the unit. The number of rosters that can be eliminated is practically limitless. Absence, confined, temporary additional duty, commuted rations, leave, hospitalized, Marine Corps driver's licenses—all these and many more can be tabbed. One battalion commander divided the bottom edge of the card into 5 equal parts in order to make it supply additional information. In this way, one colored tab represented a different thing when placed on the card in each of the 5 spaces.

Many individuals engaged in administrative work have expressed dissatisfaction with the unit diary because it does not give the information that the old morning report once did. Battalion and regimental commanders are interested in the number of men who are absent, not just the ones whose absence starts or stops on that day. Here again, General Order 47 provides the answer if it is properly used. Intermediate commands receive a copy of the IRC and the diary. By use of the colored tabs at the intermediate level, a morning report can be prepared by the adjutant from the diary. It will be on the commander's desk as soon as a consolidated morning report. All he has to do is to put on and take off the tabs indicated in that day's diaries, count the appropriate tabs and put the report on the CO's desk.

In conclusion, it is time for us to quit crying and review our procedures. In the personnel administration field, we have more than enough personnel to get the job done well. Don't bemoan the fact that we don't have trained personnel. Devote an hour a day to training them. Get back to the company clerk concept so that administration can be kept current. With one clerk doing the work, and all permanent records being checked against each other, errors will be reduced to a minimum. Give the clerk something to take pride in. Review your procedures—you'll be amazed at the results.

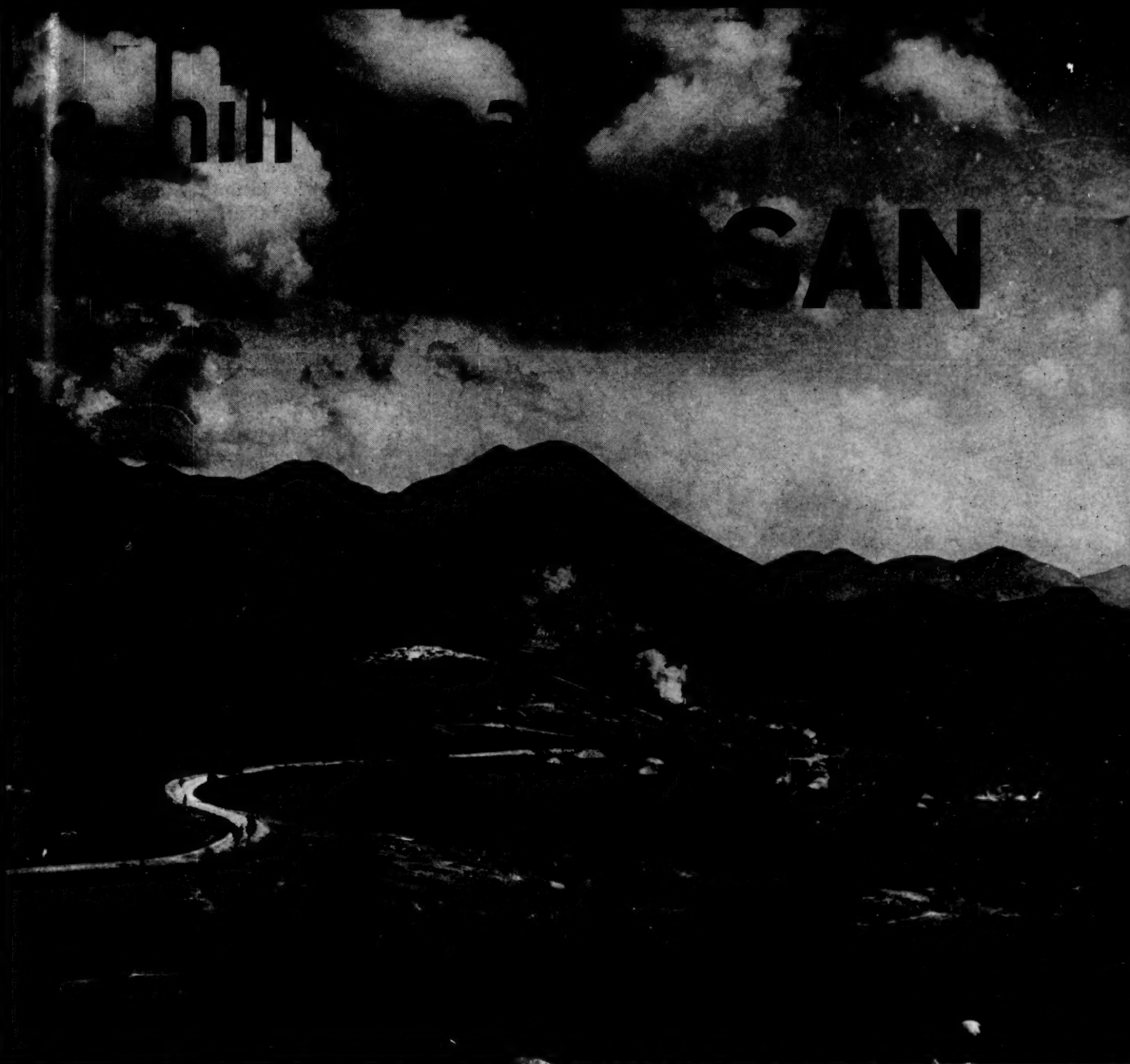
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THE MARINES OF COMPANY A were digging in on their line of departure. In order to reach it, they had just fought across a 1,000-yard rice paddy and up the slopes of a 250-foot hill.

It was 1200, 3 September 1950, and the 4 rifle companies of the 1st and 2d Bns, 5th Marines, (still operating under the tables of organization for peace, each battalion of the 5th Marine Regiment had only two rifle companies) were passing through the Army's battered 9th Infantry. Two days earlier, the North Korean 9th Division had

The enemy sat on Hill 91 and waited. "A" Co had taken other hills by frontal assault, but now it was time for a change

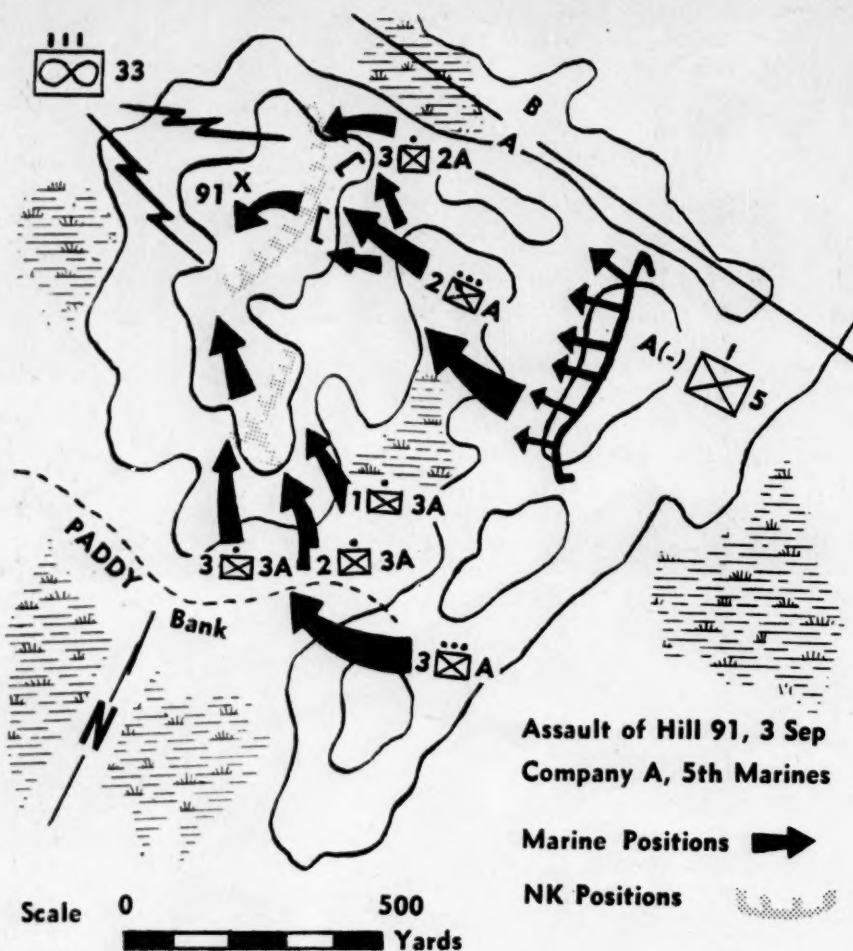
smashed across the Nakdong River in an all-out drive to penetrate the western wall of the Pusan Perimeter and sever the life-line from Pusan to Taegu and the northern front of the United States Eighth Army in Korea.

When the thin defenses of the 2d Inf Div began to crack in the face of the Communist onslaught, LtGen Walton H. Walker, Eighth Army Commander, had ordered the 1st Prov Mar Brig out of reserve at Masan and into its third counter-attack of the 2-month-old Korean conflict. On 2 September, the Ma-

rines moved into forward assembly areas near the city of Yongsan, the Reds' intermediate objective now only 1,000 yards behind the American front.

The CG of the 2d Inf Div issued a brief order for the counterattack. The Brigade would take over the center of the line by jumping off from 9th Infantry positions on a long, low ridge squatting athwart the road leading from Yongsan to the Nakdong Bulge, some 10,000 yards away. While the Army regiment swung northward to advance on the Marine right, the Brigade

By Capt Nicholas A. Canzona



would drive forward and hammer out the critical dent in the Pusan Perimeter. The 23rd Infantry and a task force made up of the Army's 72nd Tk Bn and 2d Eng Bn would be responsible for the Division's right and left flanks respectively.

Early on 3 September, the brigade commander, BrigGen Edward A. Craig, set out by helicopter to reconnoiter the front and watch his Marines go into action. Only by luck did the pilot find a hole in the thick overcast that would allow for observation. As the rotary craft drifted downward, the Marine leader noted that the situation on the ground bore no resemblance at all to the plans of the previous day. A long column of Marines was slowly fighting through the streets of Yongsan—1,000 yards from the designated line of departure.

Shortly before dawn, the North Korean commander had thrown a regiment against the weary, under-strength companies of the 9th Infantry. The lines on the right of the road collapsed, and the Com-

munist tide surged eastward to the outskirts of Yongsan. The usual vanguard of infiltrators slithered ahead through the mist in time to harass the 2d Bn, 5th Marines, which was moving forward for the attack. Accompanied by a platoon of M-26 tanks, 2/5 pressed through rubble-strewn streets and methodically eliminated the infiltrators. Having reached the western edge of the city, the Marine battalion began a series of envelopments to the right, gradually feeling its way into the situation.

The 9th Infantry positions on the left of the road crumbled just as the situation on the right was beginning to crystallize. Brigade supporting arms roared into action in time to cover their withdrawal, but the entire line of departure—on both sides of the road—was now the property of the NKPA 9th Division.

The 1st Bn, 5th Marines, belatedly got into position south of Yongsan and struck out through 1,000 yards of muck toward its half of the line of departure, now tagged "Objective

One." Company B was on the right, guiding on the Yongsan road which served as a boundary between the two assault battalions. On the left, Able Company was hard-pressed to keep its skirmishers aligned because of the difficult terrain and enemy machine gun fire. The 81mm mortars of 1/5 alternated with the howitzers of the 1st Bn, 11th Marines, to keep a steady shower of high explosive pouring down on the crest and forward slopes of the objective.

At 1105, Companies A and B were in position to assault the hill from its lower slopes. Marine casualties were light up to this point, and it seemed that supporting arms had taken the sting out of the Communist drive. Encouraged by the thunder of a final preparatory barrage, the infantrymen, with a piercing yell, rose as a body and charged up the steep incline. Two companies of North Korean entrenched along the military crest likewise rose as one—and fled. The panic-stricken Reds were easy targets for the Brigade marksmen; and before the survivors had cleared the summit and disappeared, the top of the hill was littered with enemy dead.

Company A's second objective was Hill 91, a parallel ridge separated from Objective One by a 200-yard valley. The 2 hills were actually linked by a long saddle on the right of the company zone, but the connection was too narrow and steep to be considered a good approach.

The A Co commander had time to study the situation carefully while his men were being resupplied and the wounded evacuated. Sitting on his target across the valley was at least a platoon of North Koreans, strongly reinforced by well-emplaced light and heavy machine guns. Fresh in the memory of the Marine officer was the bloody battle of Obong-ni Ridge which had occurred in the same locale only 2 weeks before. At that time, the Brigade had erased the first enemy bridge-head across the Naktong by evicting the NKPA 4th Div and driving it into the water where it was torn to shreds in broad daylight by Marine air and artillery.

The situation and time element at Obong-ni had left no alternative but frontal attack against a battalion of one of the best divisions in the North

Korean Army. All of the machine gun sections had been attached to the assault platoons where these vital weapons were rendered useless as men clawed their way uphill in a costly 2-day battle. There had been no surprise at Obong-ni, for the Reds were entrenched well enough to withstand terrible poundings by Brigade supporting arms. North Korean machine gunners, grenadiers and riflemen had waited expectantly as they watched Marines plod through a wide rice paddy and ascend the steep, barren slopes of the great ridge.

Now, 2 weeks later, the company had gone through another frontal assault up another slope devoid of cover and concealment. Again the enemy had enjoyed the advantage of sitting, watching and waiting. In this case, however, the Red soldiers of the 9th Div had panicked; for they were largely conscripts recently impressed into a desperate Communist army fighting against time. Nevertheless, Hill 91, spitting machine gun bursts from across the valley, could well prove to be a small-scale Obong-ni Ridge.

It was time for a change. The company commander had developed an elaborate plan through which Company A would grab the enemy on Hill 91 by the throat and flatten him with a hard left hook. On Objective One, there would remain a base of fire consisting of the 1st Platoon and all 3 sections of machine guns. While this supporting force hung a steel curtain over the enemy entrenchments, the 2d Platoon would distract the Reds by plunging forward and reaching across the valley to the lower slopes of the objective. Simultaneously with the 2d Platoon's feint, the 3d Platoon would circle to the south along a rice-paddy bank which offered a degree of cover and concealment. Upon reaching a desirable position from which to launch an assault, the 3rd Platoon was to hit the enemy's right flank and roll him up.

It so happened that Able Company had picked up 2 extra SCR 300 radios in its travels around the Pusan Perimeter. The platoon leaders would each have one for the attack, in order to share the battalion net and be in constant contact with the company commander.



The 'Fire Brigade' gets ready . . .

At 1445, Corsairs of Marine Aircraft Group 33 screamed down and raked Company A's objective with 5-inch rockets and machine gun fire. While the planes kept the North Korean defenders occupied, the 3d Platoon moved around to the left and along the paddy bank toward the enemy's right flank. Nearing the base of the hill, the platoon leader prepared for the assault by deploying his unit in a V formation with each squad in column. Up to this point, the enveloping force had not been bothered by the Reds.

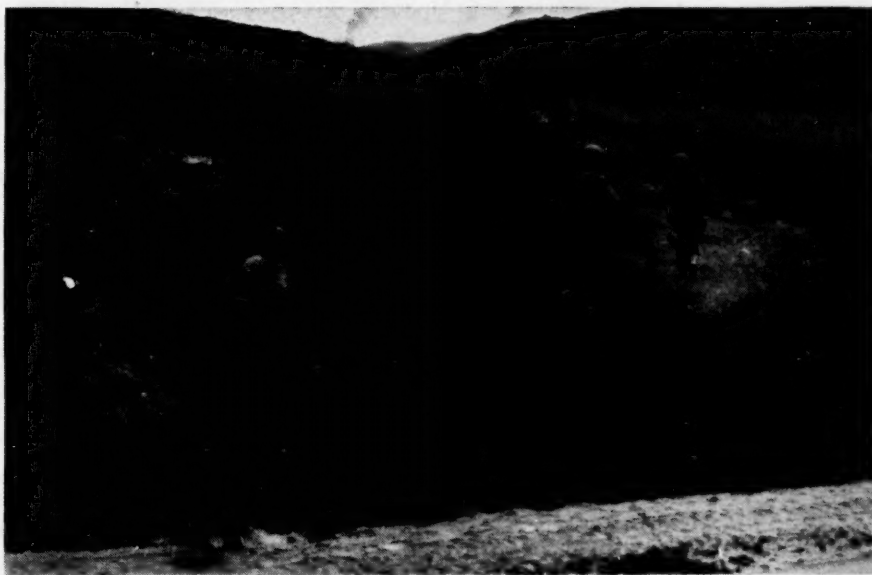
Back at the line of departure, the 2d Platoon readied itself for the diversionary thrust across the valley. When 1/11 followed up the air strike with a blistering preparatory barrage, the Marines charged down-

hill and into the grainfields. As the last of the big howitzer shells crashed into the Communist positions, Able Co's base of fire cut loose with a chorus of machine guns, rifles and BARs. The steady stream of lead enabled the assault to start up the slopes of the objective as planned.

From the base of fire, the Captain observed the 2d Platoon go into the last phase of the feint by moving upward in the big draw at the juncture of Hill 91 and the razorback saddle on the right. But it developed that their tactics became so realistic, and the mock attack carried the Marines so far up the gulley that the base of fire had to be silenced.

The North Koreans sitting atop the objective were equally impressed by the realism of the feint, with the

. . . and moves in to the objective





1/5 mortars range in . . .



. . . 1/11 arty adds an authoritative bark . . .



. . . A/5 men wait while the hill churns

result that Able Company's 2d Platoon was quickly pinned down by close-range machine gun fire. When Communist grenades began to bounce down the center of the draw, the platoon was split in two as the Marines hugged the sides for the scant protection they offered.

When 1/11 had commenced with its artillery preparation after the air strike, it came as a complete surprise to the platoon out on the left flank. This part of the attack plan had passed them by, and they knew neither the scope nor duration of the barrage. Thus, while 105mm shells churned the length and breadth of his target, the platoon leader withheld his squads from an assault position by a wide safety margin. His prized SCR 300 was transmitting his requests for information back, but the fickle machine refused to accept answers. It was necessary, therefore, that he take a long count after the last shell exploded, before he would order his men to strike at the enemy's dangling right flank.

When the envelopment resumed, the 3d Platoon had to advance more than 50 yards before reaching the base of Hill 91. The resulting time lapse gave a groggy and bruised squad of North Koreans enough of an interval to dust off and take stock of the situation. Reinforced by a wheel-mounted heavy machine gun of Russian origin, the Reds on the southern tip of the hill opened fire just as the Marines were feeling out the lower slopes.

The 3d Platoon leader was caught in the first fusillade and fell with a bullet in his leg, and the platoon sergeant, who had joined the platoon only the previous evening, took command of the attackers.

The 3d Platoon, which 2 weeks earlier had cleared 4 of the 6 blazing peaks on Obong-ni Ridge, was not to be stopped by a squad of riflemen and one automatic weapon. An assault line formed near the base of the hill with the 1st, 2d and 3d squads aligned from right to left in that order. This deployment and the enemy's disposition enabled the 3d squad to advance most rapidly and strike at the rear of the heavy machine gun emplacement. Having sparked the swift uphill assault, a squad leader led a fire team forward for the kill. He was painfully



By 1630—2d objective secured

wounded before one of his men tossed a grenade which dispatched the crew of the automatic weapon.

This squad leader's aggressiveness eased the pressure on the other 2 squads, so that they were able to drive up the slope behind a shield of assault fire and close with the Communist riflemen shooting from above.

At this point, the 3d Platoon had been engaged on the flank about half an hour. To the 2d Platoon on the forward slope of Hill 91 it seemed more like half a day. Every time a Marine of the 2d Platoon budged in the gully, the air around him crackled. One Red machine gunner at the head of the draw was running the show, and a supporting cast of North Korean riflemen and grenadiers played their parts with determination.

The minutes that followed multiplied more rapidly in the 2d Platoon leader's mind than they did on his watch, and he concluded prematurely that with the 3d Platoon leader wounded, the envelopment had failed. Undoubtedly, the precariousness of his perch added to the

impatience which caused the young officer to call for permission to make a frontal assault from his positions in the gully. At the company observation post back on Objective One, the CO was sympathetic enough with the 2d Platoon's plight to grant the request. He immediately followed up with a call for a preparatory barrage on the enemy positions commanding the draw.

In the ensuing time interval, a tragic coincidence added to the woes of the 2d Platoon, leaving its leader in a humor that boded no good for the Reds on the crest of Hill 91. Just prior to his request for permission to attack in the wake of supporting fire, enemy mortar explosions had begun to dance erratically in Company A's zone of action. Official records of 1/5 show that this development was reported to battalion, although the routine message apparently did not register on 2d Platoon's radioman. Thus, the 2d Platoon leader was unaware that the battalion Forward Air Controller had an OY-2 observation plane of VMO-6 on the wing.

The aerial bloodhound sniffed out

the North Korean mortar position in short order and barked out the vital statistics for the artillerymen of 1/11. While the howitzers were being loaded for the counter-battery mission, 4.2-inch mortars of the 5th Marines were readied for the preparatory barrage. And with unconsciously good timing, the Communist mortarmen were priming their weapons at the same moment. The big muzzles on both sides belched almost simultaneously.

Naturally enough, neither Marines nor North Koreans were surprised to hear the telltale whistling and rattling overhead, but the cumulative results came as a jolt to both. The enemy mortar position was smothered by 1/11's artillery concentration, and the last Red machine gun emplacement on Hill 91 was obliterated by 4.2-inch shells. Unfortunately, two of the last rounds fired by the Communists landed in the midst of the 2d Platoon, killing 2 Marines and wounding 3 others.

This was the last straw for the rifle platoon leader, who believed that part of his own preparatory barrage had fallen short. Rising to his feet, he yelled for an assault in unprintable terms, then bounded up the slope with his 1st and 2d squads. Far across the draw, his isolated 3d squad had worked up to the razor-back saddle during the preliminary bombardment and he was thus situated ideally to strike at the enemy's left.

There followed another triple coincidence, but this time the hapless North Koreans on the summit of Hill 91 felt the full impact. On their right, the enveloping force had gained the crest and gathered momentum with the help of the heavy machine gun they captured. As the bell rang for the final round, the Reds were slammed by 3 punches in swift succession: from the north, from the east, and from the south. A handful of enemy survivors raced down the western slopes, leaving the hill cluttered with several automatic weapons, their crews and the better part of a rifle platoon.

At 1630, battalion notified regiment that the second objective was secured. Shortly thereafter, Companies A and B were ordered to dig in for the night.

USMC

passing in review

BOOKS OF
INTEREST TO
OUR READERS

"... Earnestly Commended ..."

FIX BAYONETS!—John W. Thomason, Jr., Capt, USMC. 245 pages, illustrated. New York: Charles Scribner's Sons. \$4.00

Fix Bayonets! is a must for every Marine. I first read it while a patient in San Diego Naval Hospital when I was a member of the 2d Battalion, 6th Marines—the commanding officer of that battalion was LtCol John W. Thomason, Jr.

There have been many books that have absorbed me completely, a few that I have been unable to put down until I had finished and two that caused me to be torn between my intense desire to read as fast as possible and my equally great desire to turn back and read the last page once more just to savor its richness of expression and fullness of feeling. *Fix Bayonets!* was one of those two.

The author, the late John W. Thomason, Jr., rose to the rank of colonel before his death. He was a regular contributor to the *Saturday Evening Post* and his short stories have been reprinted in book form under such titles as *Red Pants and Other Stories*, *Salt Winds and Gobie Dust* and *The Fighting Preacher*. In addition, his biography of Sheridan was a text book at West Point for many years.

Fix Bayonets! has been out of print for a number of years and this new edition contains a foreword by our Commandant, General Shepherd

ends the foreword by saying, "To all Americans who aspire to the standard of heroism of those World War I Marines, this book is earnestly commended."

It is the story of the 1st Battalion, 5th Marines in World War I. More specifically, it is the story of the 49th Company.

The introduction describes the 5th and 6th Marines which were a part of the 2d Division, US Regular. "And there were also a number of diverse people who ran curiously to type, with drilled shoulders and a bone-deep sunburn, and a tolerant scorn of nearly everything on earth. . . . Rifles were high and holy things to them. . . . They were the Leathernecks. . . . They were the old breed of American regular, regarding the service as home and war as an occupation." In speaking of the 2d Division, the author says, "It was a division distinguished by the quality of dash and animated by an especial pride of service. It carried to a high degree 'esprit de corps.'" He speaks of the 2d Engineers as something extra special who fought all day with the Marines and infantry and spent the night building roads.

Three campaigns are related in detail from the point of view of the 49th Company. The three related are: Belleau Wood, Soissons and Blanc Mont. Each account of a campaign contains the accounts of a

number of battles and skirmishes and a few of the administrative details of war. The skirmishes and administrative details are related in such a way that the reader is certain that such things went on all the time and automatically weaves them into the picture the author is painting.

The language is deceptively simple and stark in its economy. It seems that only the barest outline is given but the picture is always complete and never obscured. If the language ever left anything obscure, it would be explained by the illustrations. There are over one hundred pencil sketches in the book. By themselves they tell a complete story. They are filled with the same stark realism, dogged determination and breath of life that characterizes the author's written words. The combination is superb.

In addition to the three campaigns, there is an ironical tale of the absurdities of men that has to do with a certain colonel wanting leave in Paris. Finding that the only way to get leave was to capture a prisoner, he pulled strings enough to get a patrol ordered for that purpose. The colonel left nothing to chance, accompanying the patrol to see that they got what they went after. The colonel got his leave.

The final chapter of the book is prophetic. It describes the Germany of the early occupation days and concludes that (1) they weren't defeated badly enough and (2) that the Germans were dangerous because they had too many children. Sadly we acknowledge that his prophecy came true.

The feats of the 2d Division, US Regular, in World War I were indeed prodigious. They have been talked about and written about for many years. The only book that doesn't tarnish those achievements is *Fix Bayonets!* It alone enhances the splendor of the victory. Buy the book. At 5 times the price, it's well worth it.

Reviewed by Col W. F. Prickett

Marine Corps Gazette • June 1955



Death of the *Walrus* . . .

RUN SILENT, RUN DEEP—Cdr Edward L. Beach, USN. 364 pages, illustrated with chapter headings. New York, N. Y.: Henry Holt and Company. \$3.95

The periscope popped out in the hollow of a long swell. It was possible to see only a few feet, and only for a moment at that, until another wave engulfed the eye-piece. Then it was clear again and a glimpse of masts above the horizon could be seen. They seemed fairly close, but the momentary impression was too fleeting to determine much. They might be the masts of the ship just torpedoed, perhaps at a thousand yards, or they might be the masts of another ship considerably closer. The wave in front of the eye-piece receded, and the source of the masts came clearly—and suddenly—into view.

It was a Japanese destroyer, broadside to—and close, *very* close—nearly alongside in fact. There were white-clad figures all over her topsides—figures who pointed arms in the direction of the submarine. The destroyer could not have been more than 200 yards away! There was no time to do anything. No time to do anything at all except try to get away. The submarine was caught—caught fair!

So began the first day of the first war patrol of the USS *Walrus*, in the Bungo Suido, between Kyushu and Shikoku. A day which would see the *Walrus* depth charged and sent to the absolute limit of her design depth to escape, her sturdy hull strained and bowed under the unaccustomed compression, her steel ribs standing rigid against the fierce implacable squeeze of millions of tons of sea water, to remain there, her propellers barely turning over until, finally at midnight, it was safe to surface.

Run Silent, Run Deep is the story of the *Walrus*, and of her commander, his officers and his men, from the day she was completed in New London until that day when, under a new skipper, she was to make her final dive off Kyushu. It is also the story of a Japanese submarine skipper, Captain Tateo Nakame, nicknamed Bungo Pete, too old for submarine command, but not too old to

destroy, by his cunning and his knowledge of submarine tactics, 6 American submarines operating in waters around the Kyushu coast—including the *Walrus*. Written in terse, professional Navy language, the narrative of *Run Silent, Run Deep* moves as smoothly and swiftly onward as one of the undersea craft about which the book is written.

Although the author states that *Run Silent, Run Deep* is fiction and that there is no conscious effort to portray actual persons, and that there is no attempt to justify submarine tactics used in the book, it will be apparent, even to non-professional readers, that in his latest book Cdr Beach has set down in vivid prose, a story that, while perhaps not that of his own experiences, is surely that of the submariners who were "representative of that brave period between 1941 and 1945" and who made the long, drama-packed, nerve-racking war patrols portrayed within the covers of this book.

Reviewed by Major G. P. Averill

Impossible Escape

PRISONER'S BLUFF—Rolf Magener. 250 pages, sketch map. New York: E. P. Dutton and Co., 1955. \$3.75

Escape from the camp for Axis internees at Dehra Dun in northern India was manifestly hopeless. The British camp commandant regarded a would-be escaper as a silly fool rather than as a desperate criminal. After all, where could the wretched prisoner hope to find sanctuary? "India is a triangle with the Himalayas as the base and the ocean on two sides. Deserts bar the way out in the northwest, jungles in the northeast. The road to Afghanistan is blocked by the forts guarding the Khyber Pass and the whole territory is made impassable for white men by the wild Afridi tribesmen." Tibet was on the other side of the Himalayas with their 15,000-foot passes snow-choked until the late spring. True, to the east lay Burma, but to get there was to travel across the face of India. No. Escape from Dehra Dun—that is, more than a day or two of freedom before being picked up and popped back into the bag again—was not practicable.

It wasn't practicable. And yet two young German businessmen, not soldiers, did the impossible and made good their escape.

Rolf Magener, in *Prisoner's Bluff*, tells how he and Heinz von Have contrived to walk out of their British prison camp with its double barbed wire fences 11-feet high, past the Gurkha sentry on the main gate and embark on the fantastic journey that ended weary months later.

Magener and von Have had little in common except the determination to escape and the ability to speak fluent, idiomatic English. They were poles apart in temperament: Magener, a dark, high-strung introvert; von Have, a blonde, nerveless extrovert. Aside from reasonable facsimiles of British uniforms and authentic paybooks (which they never dared use and finally destroyed), their chief equipment for escape lay in a colossal ability to bluff. And bluff they did from the moment they sauntered past their guards, chatting with gay nonchalance, until the goal was finally reached. In their own way, both Magener and von Have showed an admirable amount of the resourcefulness and initiative so well exemplified by Otto Skorzeny.

From Calcutta the escapees impudently took foot in hand, as the expression has it, and made their way down through Chittagong to Cox's Bazaar and over the Burma border into the Arakan. General Slim's Fourteenth Army was across the Irrawaddy and slugging through improbable jungles on the way to Rangoon. The two young Germans were of a mind to cross through the British lines and find a refuge with the Japs on the other side. Rather a large order and the odds against pulling it off successfully must have been somewhere in the neighborhood of 100-1 against.

Yet 34 days later, with Dehra Dun 1,500 miles behind them, Magener and von Have are picked up by the Japs, after having passed through the forward positions and penetrated into the reserve area. By this time both men are almost at the end of their endurance. The privations and stresses they have endured on their long trek has drained them physical-

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ly and mentally. Their joyful relief at the realization they have attained their objective is almost delirious.

And what do the Japs do with these two odd, English-speaking scarecrows in tattered British clothing? Why, the Japs promptly lock up both von Have and Magener as enemy spies. After all, no escaper could travel all the way from northern Hindustan and through half of Burma. Quite fantastic. Keep a close eye on these dangerous characters until they can be turned over to the *Kempetai*—those lads in the secret police know how to get to the truth in a matter like this.

Magener and his companion had a weary, long time, while undergoing the *Kempetai* investigation in Rangoon, to ponder on the character and philosophy of the Japanese. Since we are currently somewhat preoccupied with Asian matters, it might not be amiss to repeat this observation of Magener's because of its applicability to the East in general: "People whose exit from life meant so little to them, and who were therefore indifferent to the personal consequences of even such an extreme event as war, must have a very intimate relation to death, and be, as it were, on the best of terms with it. . . Death was no disaster, merely a change to a higher state."

Eventually Magener and von Have were flown to the dubious safety of the German Embassy in a Tokyo that was receiving the full attention of American bombers based in the Mariannas. Early in October of 1947 the two escapees from Dehra Dun via Rangoon and Tokyo were returned to Germany and clapped into an American repatriation camp at Ludwigsburg. The other side, as Magener observes, had the last word after all.

The British have a peculiar facility for escaping from POW camps and, later on, writing good books about their adventures. I don't mean to suggest that the British enjoy a monopoly on this type of thing, but on the basis of past performance it began to seem that way. But there are other contenders in the ring now.

Reviewed by Col R. McC. Tompkins

Marine Corps Gazette • June 1955

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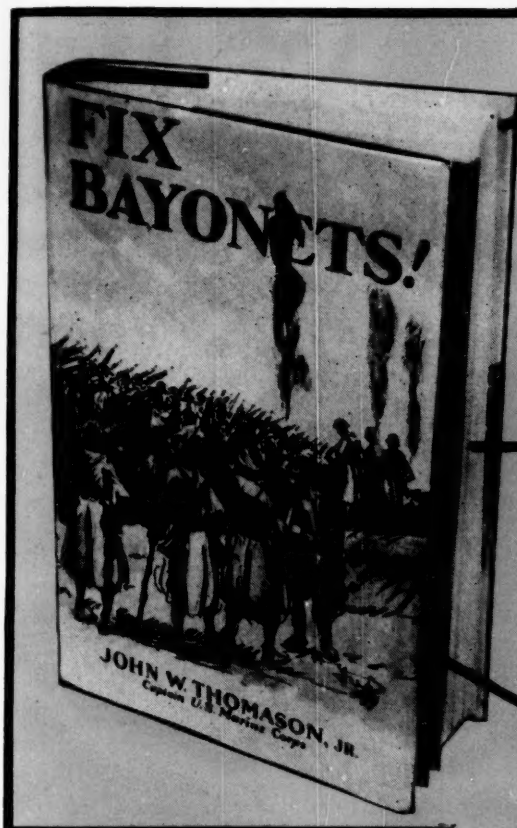
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